

Mineral Deposits and Occurrences in the Nightingale Lake Area, NTS 63N/1

by D.E. Prouse, M.A.F. Fedikow and G. Ostry

Manitoba
Industry, Trade
and Mines
Geological Survey





Georeference:

NTS area(s): 63N/1

Keywords:

- | | |
|-----------------------|---------------------------|
| amphibolites | Kisseynew Domain |
| anthophyllite | Lighthouse Lake |
| Burntwood Group | Limestone Creek |
| Chartier Lake | Limestone Point Lake |
| chemical sedimentary | massive sulphide deposits |
| Churchill Province | metallurgy |
| Compton Lake | mineral deposits |
| copper | mineral exploration |
| cordierite | mineralization |
| economic geology | Missi Group |
| economic geology maps | Nightingale Lake |
| File River | rhyolites |
| gneisses | Rothstein Lake |
| gold | sedimentary rocks |
| graphite | sedimentation |
| Herblet Lake | Sherridon Group |
| Huppe Lake | silver |
| iron formations | volcanic rocks |
| Kisseynew Belt | zinc |

Suggested references:

Prouse, D.E., Fedikow, M.A.F., and Ostry, G. 2000: Mineral deposits and occurrences in the Nightingale Lake area, NTS 63N/1; Manitoba Industry, Trade and Mines, Geological Survey, Mineral Deposit Series Report No. 24, 45 p.

Manitoba
Industry, Trade
and Mines
 Geological Survey



Mineral Deposit Series Report No. 24

Mineral Deposits and Occurrences in the Nightingale Lake Area, NTS 63N/1

by D.E. Prouse, M.A.F. Fedikow and G. Ostry
 Winnipeg, 2000

Industry, Trade and Mines

Hon. MaryAnn Mihychuk
 Minister

Hugh Eliasson
 Deputy Minister

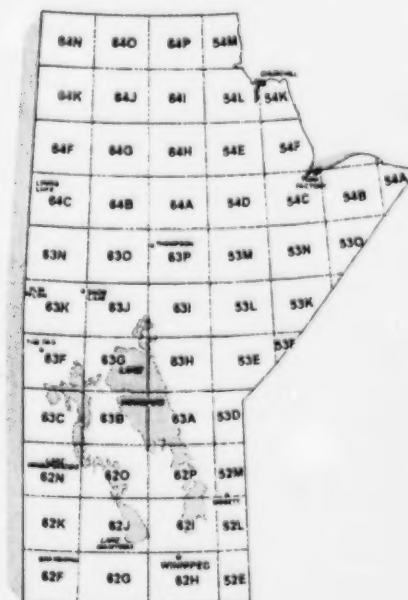
Mineral Resources Division

C.A. Kaszycki
 A/Assistant Deputy Minister

Geological Survey

E.C. Syme
 A/Director

13	14	15	16
12	11	10	9
5	6	7	8
4	3	2	1



This publication is available in large print, audio tape or braille on request.

TABLE OF CONTENTS

	Page
INTRODUCTION.....	1
Methodology.....	1
Format of mineral deposit maps.....	2
Format of mineral deposit reports.....	3
Abbreviations.....	3
Acknowledgments.....	4
GEOLOGY OF NTS 63N/1.....	5
Stratigraphy.....	5
General geology.....	5
Structure and metamorphism.....	6
Mineral deposits and occurrences.....	6
REFERENCES.....	7
MINERAL DEPOSITS AND OCCURRENCES: NIGHTINGALE LAKE AREA (NTS 63N/1).....	9
Location 1.....	10
Location 2.....	12
Location 3.....	14
Location 4.....	16
Location 5.....	18
Location 6.....	20
Location 7.....	22
Location 8.....	24
Location 9 (Wim).....	26
Location 10.....	28
Location 11.....	30
Location 12.....	32
Location 13.....	34
Location 14.....	35
Location 15.....	36
Location 16.....	38
Location 17.....	39
Location 18.....	41
Location 19.....	42
Location 20.....	44
Location 21.....	45
FIGURE 3	
Figure 1: Location of mineral deposits and occurrences (NTS 63N/1).....	1
Figure 1-1: Geology and sample location map, occurrence 1.....	11
Figure 2-1: Geology and sample location map, occurrence 2.....	13
Figure 3-1: Geology and sample location map, occurrence 3.....	15
Figure 4-1: Geology and sample location map, occurrence 4.....	17
Figure 5-1: Geology and sample location map, occurrence 5.....	19
Figure 6-1: Geology and sample location map, occurrence 6.....	21
Figure 7-1: Geological setting of occurrence 7.....	23
Figure 8-1: Geological setting of occurrence 8.....	25

Figure 9-1: Geology in the vicinity of the Wim Cu deposit.....	in pocket
Figure 9-2: Geological cross section through the Wim Cu deposit.....	27
Figure 10-1: Geological setting of occurrence 10.....	29
Figure 11-1: Geological setting of occurrence 11.....	31
Figure 12-1: Geological setting of occurrences 12 to 14.....	33
Figure 15-1: Geological setting of occurrence 15.....	37
Figure 16-1: Geological setting of occurrences 16 and 17.....	40
Figure 18-1: Geological setting of occurrences 18 to 21.....	43

TABLES

Table 1: Mineral deposit types.....	2
-------------------------------------	---

MAP

MDS Map No. 24: Mineral deposits and occurrences in the Nightingale Lake area (NTS 63N/1), Manitoba 1:50 000.....	in pocket
--	-----------

INTRODUCTION

This report and accompanying map are part of a Mineral Deposit Series presenting a uniformly organized and up-to-date collation and analysis of information on mineral occurrences in the Province of Manitoba. The series is intended: (1) to provide explorationists with a geoscientific database that can be used in mineral exploration; and (2) to provide a technical database for other government users in resource evaluations, formulation of mineral and land use policies and the initiation of regional development programs.

Methodology

The documentation program was initiated in the main mining districts of the province under the 1984-1989 Canada-Manitoba Mineral Development Agreement. Under this project mineral deposit geologists of the Geological Services Branch (now the Manitoba Geological Survey) have attempted to inspect and evaluate each known mineral occurrence. These site visits ranged from a preliminary half-day or less search

of an area for old workings, to extensive geological mapping of selected occurrences for a week or more. In addition, for each occurrence the geologists have attempted to synthesize available data from published and unpublished sources. The Manitoba Mineral Inventory Card Index and the cancelled Assessment Files have been used extensively in the preparation of this report. Mineral occurrence documentations representing only cancelled assessment file compilations are identified as such under the heading 'Name'. Information for all other occurrences was acquired primarily by field examination and are commonly supplemented by cancelled assessment file compilations.

Information has been collated and maps prepared with the assistance of junior staff geologists and summer assistants. Senior mineral deposit geologists have provided the deposit classifications and text for the report.

The locations of all mineral deposits and occurrences are presented in Figure 1.

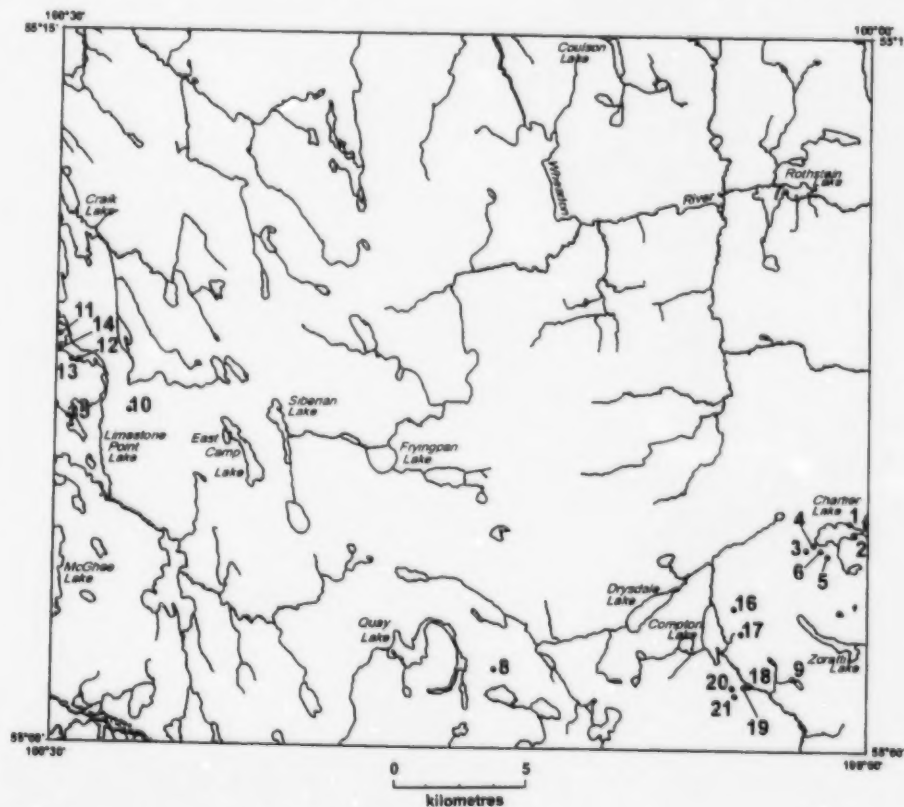


Figure 1: Location of mineral deposits and occurrences (NTS 63N/1).

Deposit versus occurrence

Throughout this report mineralization is referred to as a deposit if tonnage and grade figures are known; all other mineralization is referred to as an occurrence.

Massive sulphide versus solid sulphide

The use of 'massive sulphide' in the geological literature is confusing in that it is not always clear whether the authors are referring to a 'massive sulphide deposit' (cf. Sangster, 1972) or a section of sulphide rich rock. In this publication 'massive sulphide' will be used in reference to a deposit type, i.e. a volcanogenic massive sulphide deposit type, rather than the nature of the mineralization. A volcanogenic or sedimentogenic massive sulphide deposit can contain a sulphide lens that locally contains as little as 10% sulphide minerals by volume. The alteration zones that are an integral part of many massive sulphide deposits rarely contain more than 50% sulphide minerals. Consequently, the use of 'solid sulphide' for 75% to 100% and 'near solid' sulphide for 50% to 75% sulphide minerals is adopted in place of the commonly used term 'massive' to describe the textural aspects of a sulphide mineralization.

Format of mineral deposit maps

Location

One of the incentives spurring the mineral deposit documentation was the absence of accurate location maps for known mineral occurrences. Inaccurate land bases have previously resulted in failure to find old workings, surveys carried out in wrong areas, and even cancellation of intended surveys by explorationists. Consequently, considerable field time has been spent in establishing occurrence locations and attempts have been made to display exact locations both on the map and in the accompanying report.

The location number on the map is a unique reference number that will be used both in the report and the geologists' unpublished database. These numbers are consecutive within each 1:50 000 NTS map sheet (but not within portions of a map sheet such as Map MDS87-1).

Deposit types

In order to maintain a mineral deposit classification, which will be useful to both explorationists and metallogeneticists, a simplified descriptive classification was selected. This classification is based on the use of common deposit types for the classification of both deposits and occurrences. The classification of mineralization is based on the premise that the mineral

explorationist requires information on metals and types of mineralization in an area as well as on the economic deposits (past, present and future producers).

All deposits and occurrences are classified according to the Deposit Type classification in Table 1.

The deposit type displayed on the map represents mineralization with the greatest economic potential, for example a disseminated narrow chalcopyrite layer is emphasized rather than a much thicker solid pyrite-graphite layer.

Mineralization

A symbol is used to denote the percentage and/or type of mineralization present. At some localities more than one type of mineralization is present. The type of mineralization displayed in the symbol represents the mineralization with the greatest economic potential as indicated by the deposit type symbol. It should be noted that in the context of this report a 'sulphide facies iron formation' is equivalent to a 'sulphide stratum'. For discussion of sulphide stratum the reader is referred to Gale et al. (1980).

TABLE 1: MINERAL DEPOSIT TYPES

STRATABOUND MASSIVE SULPHIDE TYPE DEPOSITS

- a) Volcanic rock-associated
- b) Sedimentary rock-associated
- c) Alteration zone associated with a or b

CHEMICAL SEDIMENT TYPE DEPOSITS

- a) Sulphide facies iron formation
- b) Oxide facies iron formation
- c) Carbonate facies iron formation
- d) Silicate facies iron formation
- e) Other chemical sediments

VEIN TYPE DEPOSITS

- a) Single vein
- b) Multiple veins or lenses
- c) Stockwork

MAGMATOGENIC TYPE DEPOSITS ASSOCIATED WITH AFIC/ULTRAMAFIC ROCKS

- a) Disseminated
- b) Layered
- c) Net textured
- d) Podiform

DEPOSITS WITH PORPHYRY AFFINITIES

PEGMATITE TYPE DEPOSITS

CLASTIC SEDIMENT TYPE DEPOSITS

REPLACEMENT TYPE DEPOSITS

DISSEMINATED MINERALIZATION - NOT CLASSIFIED

Host Rocks

In general, this description refers to the immediately underlying and overlying rock types. When a number of rock types are present in an extensive zone of mineralization, the most common rock types are indicated.

Elements

This description allows for a maximum of three metals present in increasing order of abundance by volume. The precious and base metals are indicated, if present, in preference to elements such as iron and carbon.

In some instances it has been more efficient on the map and in the report to make reference to an area of mineralization rather than individual deposits or occurrences. All mineralization in the area delineated by a dotted line on the map is referenced in the report under the location number within that area.

Format of Mineral Deposit Reports

Location

Each deposit or occurrence description will contain the unique reference number, deposit or claim name where applicable, UTM coordinates, general area description, the reference number of the airphoto on which the deposit can be located and a brief description of method(s) of access.

Exploration Summary

This section provides a summary of the extent of exploration and was compiled from Mineral Inventory Cards, cancelled Assessment Files, and maps and files from the Mining Recording Office.

Geological Setting

In this section the general geology of a deposit or occurrence is described. The information levels of the descriptions vary considerably and depend largely upon the extent of the geological mapping during the documentation project. For further details the reader should consult the references cited.

Mineralization

A detailed description of the mineralization provides readers with the opportunity to make their own evaluation of the significance of a mineral occurrence or deposit.

Geochemical Data

In addition to detailed geological mapping around individual mineral occurrences, rock samples were collected from trenches and outcrops in the vicinity of the occurrences. The assay and geochemical data are

included in this section. Extensive geochemical databases are referenced but not reproduced in this report.

Classification

In this section the geologist may indicate the reasons for the classification appearing on the Mineral Deposit Map. For those localities containing more than one deposit type, the deposit types not shown on the map are documented here.

References

These include both published and unpublished sources. For published and assessment report information the reader should obtain the desired material directly from the source. The mineral deposit geologists will endeavour to supply copies of unpublished material on a deposit by deposit basis. References listed at the end of each occurrence description may also include sources of additional information not directly cited in the text.

Abbreviations

The following abbreviations are used throughout the deposit and occurrence descriptions:

A.F.	assessment file
Asp	arsenopyrite
CB	claim block
c.g.	coarse grained
cm	centimetre
cp	chalcopyrite
DDH	diamond drill hole(s)
diss.	disseminated
EM	electromagnetic
EOH	end of hole
f.g.	fine grained
g/t	grams per tonne
HBED	Hudson Bay Exploration and Development Company Limited
HBMS	Hudson Bay Mining and Smelting Company Limited
HLEM	horizontal loop electromagnetic
km	kilometre
m	metre
m.g.	medium grained
M.I.	Mineral Inventory Card
NSS	near solid sulphide
oz/ton	ounces per ton
po	pyrrhotite
py	pyrite
sp	sphalerite
SS	solid sulphide
t	tonne

tr.	trace
VLEM	vertical loop electromagnetic
VLF-EM	very low frequency electromagnetic

Acknowledgements

Craig Malis, Andy Lebedynski and Gerald Trembath assisted with field investigations of many of the occurrences during the 1988 and 1989 field seasons. Gary Ostry conducted field investigations in the vicinity of Limestone Point Lake in 1989. Dale Ziprick assisted Mark Fedikow with mapping in the vicinity of the Wim deposit in 1991. Mark Fedikow and Gary Ostry compiled information for the geological base map accompanying this report. We would also like to acknowledge the following individuals for their

assistance in the preparation of this report.

Compilation: G. Trembath

Drafting: B. Lenton

Typing: K. Proutt

Review: G. Gale, E. Syme, A. Bailes

Editing: M. Lavergne

NOTE:

This mineral deposit report and the accompanying map are intended to be active documents that can be updated, as the new information becomes available. Any additional unpublished information due to revisions may be obtained by contacting the authors or the Director, Geological Survey.

GEOLOGY OF NTS 63N/1

The geological base for MDS Map No. 24 is a compilation of the 1:50 000 scale map of Bailes (1975), the 1:63 360 map of Kornik (1968) and the 1:50 000 map of Zwanzig et al. (1988). The area is situated near the south margin of the Churchill Province of the Precambrian Shield in Manitoba. It is underlain by supracrustal and intrusive rocks of the east-trending Paleoproterozoic Kiseynew metasedimentary gneiss belt. The southwest portion of the map sheet is underlain by rocks that are part of the south flank of the Kiseynew Domain. The northeast portion is part of the central core of the Kiseynew Domain (Zwanzig, 1999).

Stratigraphy

Delineating a unified stratigraphic system for strongly metamorphosed rocks of the Kiseynew Belt has been problematic, as has been defining the relationship between rocks of the Kiseynew Belt and those of the Flin Flon Belt. In the past, Kiseynew paragneisses have been assigned to various suites or groups (Bateman and Harrison, 1946; Harrison, 1951; Robertson, 1953; Kornik, 1968). Work in the Snow Lake and File Lake areas showed Kiseynew gneisses to be the less recrystallized equivalent of sedimentary rocks of the Flin Flon Belt (Bailes, 1971, 1975; Froese and Gasparini, 1975).

Structural and stratigraphic data collected throughout the Flin Flon Belt and the Kiseynew Belt in the 1980s and 1990s has revised our understanding of the stratigraphic nomenclature and tectonic history of this area. Results from the NATMAP Shield Margin Project and LITHOPROBE Trans-Hudson Orogen Transect indicate that the southeastern Reindeer Zone, which includes the Kiseynew and Flin Flon belts, is composed of three components in a northeast-dipping crustal-scale stack (Lucas et al., 1996; Syme et al., 1998). These components were juxtaposed during 1.84 to 1.80 Ga collisional deformation and comprise: at the lowest structural level >2.4 Ga metaplutonic rocks and paragneisses of the Saskatchewan Craton; at intermediate levels 1.91 to 1.84 Ga volcanic and plutonic rocks of the Flin Flon Belt and Glennie Domain; and at the highest structural level 1.85 to 1.83 Ga marine turbidites of the Burntwood Group and partly coeval distal facies of alluvial-fluvial sandstones (Missi Group) of the Kiseynew Domain (Lucas et al., 1996; Syme et al., 1998).

The Kiseynew Domain, which dominates NTS 63N/1,

comprises: 1) a central zone of sediment-derived migmatite, and 2) a flanking zone of structurally inter-layered gneisses (Zwanzig, 1999). At its south flank the Kiseynew Domain Burntwood Group paragneisses are structurally, and possibly stratigraphically, underlain by volcano-plutonic orthogneiss. Metamorphosed clastic deposits and thin volcanic units of the Missi Group stratigraphically overlie the Burntwood paragneisses. To the west of NTS 63N/1 many of the units in the Kiseynew Domain correlate with those in the Amisk collage directly to the south (Zwanzig, 1999). Although the high-grade metavolcanic rocks of the south flank remain undated, they are intruded by the same 1.87 to 1.85 Ga plutonic rocks as their lower-grade equivalents in the Amisk collage of the Flin Flon Belt and are, thus, probably 1.91 to 1.88 Ga in age. In the Kiseynew Domain, the plutons are typically strongly foliated or have been converted to orthogneiss (Zwanzig, 1999). Many of these plutons belong to the early and middle stages of successor arc magmatism identified in the Amisk collage of the Flin Flon Belt (Whalen et al., 1999), but some are as young as 1.84 to 1.83 Ga according to U-Pb dating by David et al. (1996) and Machado et al. (1999).

General Geology

The south and west portion of the map area is part of the south flank of the Kiseynew Domain and is underlain by arkose and metagreywacke of the Burntwood and Missi Groups (Zwanzig and Schledewitz, 1992; David et al., 1996). The northern two-thirds of the map area is part of the core zone of the Kiseynew Domain, and is underlain by metagreywacke and migmatite paragneisses of the Burntwood Group. Both the south and the north flanks of the Kiseynew Belt contain granitic and tonalitic orthogneisses (Zwanzig and Lenton, 1987). Most of the amphibolite layers in the Guay-Wimapedi lakes area were interpreted by Bailes (1975) to be metamorphosed gabbro sills. Felsic metavolcanic rocks border the Herblet Lake gneiss dome in the southeast corner of the map area (Bailes, 1975). Zwanzig (1999 and references therein) interprets amphibolite and felsic gneiss of the south flank to be derived from the 1.92 to 1.87 Ga volcanic rocks of the Amisk collage and possibly the Snow Lake assemblage. Geochemistry of these rocks suggests deposition in arc, back-arc basin and arc-rift environments analogous to those in the Flin Flon Belt (Zwanzig, 1996).

The southeast corner of the map sheet is dominated by 1.89 Ga (David et al., 1996) orthogneisses of the Herblet Lake gneiss dome. The gneiss domes have

been variously interpreted to be cored by an older basement complex, recrystallized Missi rocks and Paleoproterozoic orthogneiss (Bailes, 1975; Fedikow and Ziprick, 1991; Fedikow et al., 1989, 1991; David et al., 1996 and references therein). East of the map area, the Herblet Lake gneiss dome is made up of several smaller dome structures within the larger complex. It consists of 3 units: 1) white to light grey granitoid gneiss; 2) amphibolite; and 3) pink granitoid gneiss. A quartzo-feldspathic gneiss unit derived from felsic volcanic strata (see above) forms a thin unit bordering the north and southwest margin of the dome, and extends south of the map area. Although Bailes (1975) interpreted the Herblet Lake dome to be an allochthonous complex composed of Missi Group sedimentary rocks formed during high-grade regional metamorphism, recent U-Pb age dating by David et al. (1996) shows that these rocks are at least 40 Ma older than the Missi Group. Bailes (1975) suggested that doming was coincident with regional metamorphism and deformation, aided by gravity instability (diapirism). U-Pb zircon dating by David et al. (1996) shows that rocks of the gneiss dome underwent upper almandine amphibolite facies regional metamorphism at 1.81 Ga.

Structure and Metamorphism

Bailes (1975) determined that rocks in the Guay-Wimapedi lakes area have been subjected to five episodes of deformation and four episodes of metamorphism, all post-Missi Group in age. Zwanzig and Schledewitz (1992) recognize four periods of deformation in the Kississing-Batty lakes area including a D₁ episode which they interpret as a pre-Missi Group event. Bailes (1975) divided the Guay-Wimapedi lakes map area into two main structural domains. A northern domain (Kisseynew Belt core zone) characterized by east-trending isoclinal folds with steep north-dipping axial planes, and a southern domain (Kisseynew Belt south flank) dominated by complex basin and dome structures. The normal stratigraphic succession in the southern part of the map area is commonly inverted by an early set of recumbent folds that Bailes assigns to D₁ and Zwanzig and Schledewitz term as D₂.

Structural analysis by Zwanzig and Schledewitz (1992) and Kraus and Williams (1998) indicate that the high-grade paragneisses of the Kisseynew Belt have been structurally transported over the volcanic rocks on the margin of the Flin Flon Belt. In addition, the south flank of the Kisseynew Belt consists of 1.84 to 1.85 Ga Burntwood Group and Missi Group paragneisses which are structurally interleaved with 1.87 Ga orthogneisses that include recognizable volcanic rocks (Zwanzig, 1999). In the Craik Lake area (north-

west corner of map sheet), the northeast dipping Burntwood Group migmatite and gneiss was transported southwest from the Kisseynew core zone over Missi Group during D₂ as fold nappes. The nappes were further displaced over the orthogneisses in the Batty Lake complex on shallow northwest-southeast plunging D₃ folds. A high-strain zone consisting of discontinuous structural slices of various rock types, extending from Limestone Creek southeast to Geekie Lake represents a detachment surface at the base of the nappe complex. In the north-central and northeastern part of the map sheet, Burntwood Group gneisses and migmatites, and granitic rocks comprise part of the core zone of the Kisseynew Belt. These rocks have also been displaced southwest but much of the displacement occurred during D₃ as a result of recumbent folding and ductile thrusting (Zwanzig and Schledewitz, 1992 and Zwanzig, 1999).

Of the four episodes of metamorphic recrystallization, only the M₂ event had widespread effects, and is coincident with the main episodes of deformation including the development of nappes and associated recumbent folds (Bailes, 1975). It created a south to north prograde regional zonation of metamorphic mineral porphyroblasts and isograds within Burntwood Group meta-greywacke in the Snow Lake and File Lake areas. A general northerly increase in metamorphic grade in the Kississing-Batty lakes area is also recognized, and is indicated by: 1) increase of metamorphic grain size and loss of primary structures; 2) a zonation of mineral assemblages with the highest-grade assemblage (sillimanite-cordierite-biotite) occurring to the north; and 3) a change from metasedimentary rocks and fine-grained gneiss to migmatite with prominent leucosome (Zwanzig and Schledewitz, 1992).

During peak metamorphism, all rocks older than the orthogneiss, including the Herblet Lake complex, were completely recrystallized to middle and upper almandine amphibolite facies mineral assemblages. Minerals formed during M₂ overprint D₁ structures and overlap D₂ and the initial stages of D₃ (Bailes, 1975). However, the prominent regional schistosity S₂, created during D₂, is preserved. Subsequent metamorphic events represent lower grade retrogressive episodes.

Mineral Deposits and Occurrences

The Wim Cu-Zn deposit (location 9) is the only known volcanogenic massive sulphide-type deposit in NTS 63N/1. The deposit is hosted by felsic metavolcanic (rhyolitic) gneiss (Bailes, 1975) which is interlayered with amphibole-plagioclase gneiss south of the deposit (Fedikow and Ziprick, 1991).

Approximately half of the other known occurrences have been classified as chemical sediment-type deposits, consisting of sulphide \pm graphite bearing strata. The sulphide facies iron formations in the Chartier Lake area are believed to be hosted by the same felsic metavolcanic gneiss unit which hosts the Wim deposit. The occurrences in the Limestone Point Lake area are hosted by siliceous gneisses and are situated within or near the Limestone Creek high-strain zone. Occurrences in the Compton Lake area are hosted by Burntwood Group or Missi Group paragneisses, some near the contact with amphibolite. All of the Compton Lake occurrences have been categorized as disseminated mineralization-unclassified due to lack of data.

REFERENCES

- Bailes, A.H. 1971: Preliminary compilation of the geology of the Snow Lake–Flin Flon–Sherridon area, Manitoba; Manitoba Mines Branch, Geological Paper 1/71, 27 p.
- 1975: Geology of the Guay–Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.
- Bateman, J.D. and Harrison, J.M. 1946: Sherridon, Manitoba; Geological Survey of Canada, Map 862A, scale 1:63 360.
- David, J., Bailes, A. H., and Machado, N. 1996: Evolution of the Snow Lake portion of the Paleozoic Flin Flon and Kiseynew belts, Trans-Hudson Orogen, Manitoba, Canada; *Precambrian Research*, v. 82, p. 107-124.
- Fedikow, M.A.F., Malis, C., and Lebedynski, A. 1989: Preliminary observations on the metallogeny of the Herblet Lake and Pulver Lake gneiss dome complexes, Snow Lake area; *in* Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1989, p. 44-53.
- Fedikow, M.A.F., Ziehlke, D.V., and Ziprick, D. 1991: Geology and alteration at the Wim massive sulphide type Cu deposit (63N/1); Manitoba Energy and Mines, Geological Services Branch, Preliminary Map 1991S-1, scale 1:5000.
- Fedikow, M.A.F. and Ziprick, D. 1991: The geological setting of the Wim massive sulphide type Cu deposit, Snow Lake area (NTS 63N/1); *in* Manitoba Energy and Mines, Minerals Division, Report of Activities 1991, p. 41-42.
- Froese, E. and Gasparrini, E. 1975: Metamorphic petrology of the Snow Lake area, Manitoba; *Canadian Mineralogist*, v. 13, p. 162-167.
- Gale, G.H., Baldwin, D.A., and Koo, J. 1980: A geological evaluation of Precambrian massive sulphide deposit potential in Manitoba; Manitoba Energy and Mines, Economic Geology Report ER79-1, 137 p.
- Harrison, J.M. 1951: Precambrian correlation and nomenclature, and problems of the Kiseynew gneisses in Manitoba; Geological Survey of Canada, Bulletin 20, 53 p.
- Kornik, L.J. 1968: Geology of the Guay Lake area (West half); Manitoba Department of Mines and Natural Resources, Mines Branch, Publication 64-6, 19 p.
- Kraus, J.L. and Williams, P.F. 1998: Relationships between foliation development, porphyroblast growth and large-scale folding in a metaturbidite suite, Snow Lake, Canada; *Journal of Structural Geology*, v. 20, p. 61-76.
- Lucas, S.B., Stern, R.A., and Syne, E.C. 1996: Flin Flon greenstone belt: intraoceanic tectonics and the development of continental crust (1.92-1.84 Ga); *Geological Society of America Bulletin*, v. 108, no. 5, p. 602-629.
- Machado, N., Zwanzig, H.V., and Parent, M. 1999: U-Pb ages of plutonism, sedimentation and metamorphism of the Paleoproterozoic Kiseynew metasedimentary belt, Trans-Hudson Orogen (Manitoba, Canada); *Canadian Journal of Earth Sciences*, v. 36, no. 11, p. 1829-1842.
- NATMAP Shield Margin Project Working Group. 1998: Geology, NATMAP Shield Margin Project Area (Flin Flon Belt), Manitoba-Saskatchewan; Geological Survey of Canada, Map 1968A, Manitoba Energy and Mines, Map A-98-2, Saskatchewan Energy and Mines, Map 258A, 6 sheets (1:100 000), 2 figures (1:325 000), legend sheet, and accompanying notes, 54 p.

- Robertson, D.S. 1953: Batty Lake map-area, Manitoba; Geological Survey of Canada, Memoir 271, 55 p.
- Sangster, D.F. 1972: Precambrian volcanogenic sulphide deposits in Canada: a review; Geological Survey of Canada, Paper 72-22, 44 p.
- Whalen, J.B., Syme, E.C., and Stern, R.A. 1999: Geochemical and Nd isotopic evolution of Paleozoic arc-type granitoid magmatism in the Flin Flon Belt, Trans-Hudson Orogen, Canada; Canadian Journal of Earth Sciences, v. 36, p. 227-250.
- Zwanzig, H.V. 1996: Geology of the Dow Lake area (parts of NTS 63K/15 and 63N/2), *in* Manitoba Energy and Mines, Minerals Division, Report of Activities, 1996, p. 19-23.
- 1999: Structure and stratigraphy of the south flank of the Kiseynew Domain in the Trans-Hudson Orogen, Manitoba: implications for 1.845 to 1.77 Ga collision tectonics; Canadian Journal of Earth Sciences, v. 36, no. 11, p. 1859-1880.
- Zwanzig, H.V., Elias, P., and Arkos, G. 1988: Batty Lake; Manitoba Energy and Mines, Preliminary Map 1988K-2, scale 1:50 000.
- Zwanzig, H.V. and Lenton, P.G. 1987: Kiseynew Project: Limestone Point Lake-Star Lake area; *in* Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1987, p. 51-54.
- Zwanzig, H.V. and Schledewitz, D.C.P. 1992: Geology of the Kiseynew-Batty lakes area: interim report; Manitoba Energy and Mines, Minerals Division, Open File Report OF92-2, 87 p.

**MINERAL DEPOSITS
AND OCCURRENCES**

LOCATION: 1

NAME:

UTM: 6103980N/435630E

ACCESS: Float plane to Chartier Lake and traverse

AREA: Chartier Lake

AIRPHOTO: MB87008-41

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey over the area south of Chartier Lake in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an airborne electromagnetic and radiometric survey of the Wimapedi Lake area in 1961 (A.F. 91628). A ground Turam electromagnetic survey was completed over the occurrence in 1971 (A.F. 90738). A weak conductor which appears to be associated with the occurrence was not drilled. HBED drilled hole Zyl-51 on a conductor located southeast of the occurrence in 1971.

GEOLOGICAL SETTING:

The area is underlain by amphibolite gneiss of uncertain origin and meta-arkose and meta-subgreywacke of the Missi Group (Bailes, 1975). The units are intruded by pink pegmatite (Fig. 1-1).

MINERALIZATION:

The occurrence is situated at the edge of a 3 m wide outcrop ridge adjacent to a swamp.

Mineralization consisting of 5 to 10% disseminated pyrite and arsenopyrite occurs in a zone of silicification within medium grained amphibolite. The amphibolite displays brick red to yellow rusty weathering colour across an area of approximately 2 m at the occurrence.

GEOCHEMICAL DATA:

Analysis of one rock chip sample returned values of 38,742 ppm As, 331 ppm Cu and 320 ppb Au. A duplicate analysis confirmed high As (35,291 ppm), Cu (324 ppm) and somewhat lower Au (62 ppb) values.

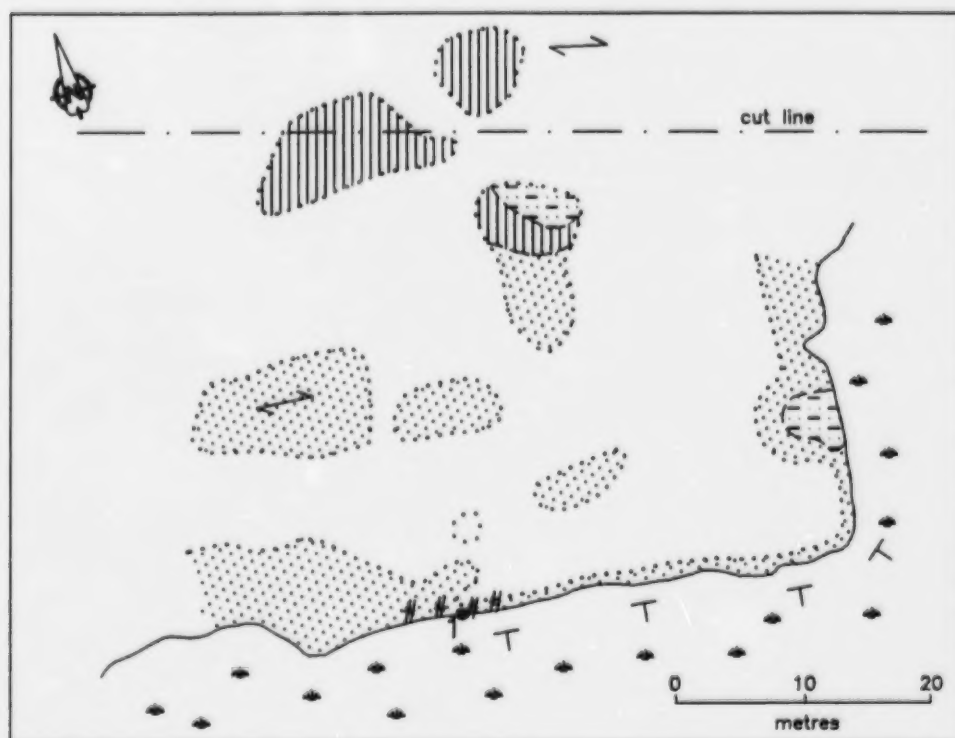
CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files: 90738, 91624, 91628; Manitoba Industry, Trade and Mines, Mines Branch.

Bailes, A.H. 1975: Geology of the Guay-Wimapedi Lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.









- | | | | |
|---|----------------------------------|---|-----------------------------|
|  | Meta-arkose | # | Rusty weathered |
|  | Amphibolite | T | Ridge |
|  | Pink pegmatite |  | Foliation/layering |
| ---- | Geological contact (approximate) |  | Swamp |
|  | Outcrop | 1● | Mineral occurrence location |

Figure 1-1: Geology and sample location map, occurrence 1.

LOCATION: 2

NAME:

UTM: 6103483N/435634E

ACCESS: Float plane to Chartier Lake

AREA: Chartier Lake

AIRPHOTO: MB87008-41

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey over the area south of Chartier Lake in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an airborne electromagnetic and radiometric survey of the Wimapedi Lake area in 1961 (A.F. 91628). An extensive ground electromagnetic survey followed the airborne survey in the early 1960s, but little information is available in the cancelled assessment (open) files. HBED completed a Turam electromagnetic survey over the occurrence in 1971 (A.F. 90738). HBED drilled hole Wim-45 in 1962 to test a conductor near the occurrence.

GEOLOGICAL SETTING:

The area is underlain by felsic metavolcanic gneiss and amphibolite of uncertain origin. The felsic metavolcanic gneiss forms a narrow layer bordering the Herblet Lake gneiss dome (Bailes, 1975).

MINERALIZATION:

A rusty weathered zone, approximately 1 m wide, consisting of 1 to 3% blocky 2 to 5 mm arsenopyrite

and pyrite is hosted by felsic metavolcanic gneiss. The zone is flanked to the south by white pegmatite and amphibolite (Fig. 2-1).

The protolith of the felsic gneiss unit is interpreted to be rhyolite, possibly part of the same sequence that hosts the Wim copper deposit (Fedikow et al., 1989). DDH Wim-45 by HBED near the occurrence intersected 1.8 m of graphite and disseminated pyrite (A.F. 90738).

GEOCHEMICAL DATA:

A representative chip sample from the occurrence returned values of 496 ppm Cu and 25 ppb Au.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

REFERENCES:

- Assessment Files: 90738, 91624, 91628; Manitoba Industry, Trade and Mines, Mines Branch.
- Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.
- Fedikow, M.A.F., Malis, C., and Lebedynski, A. 1989: Preliminary observations on the metallogeny of the Herblet Lake and Pulver Lake gneiss dome complexes, Snow Lake area; *in* Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1989, p. 44-53.

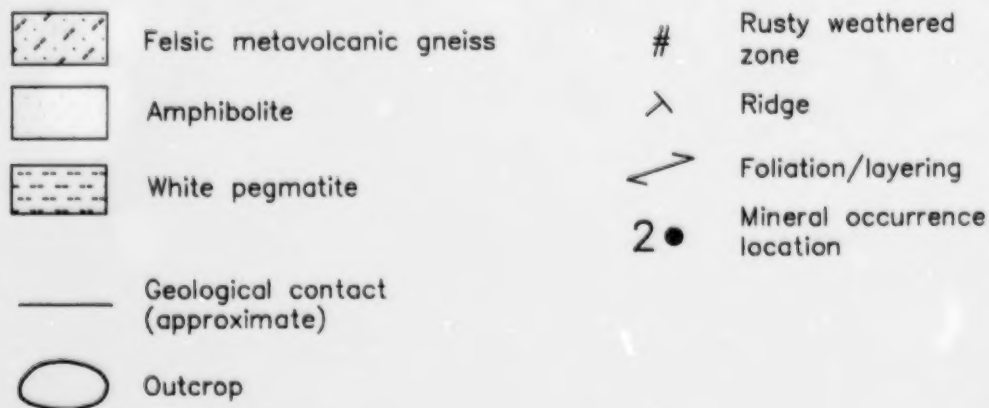
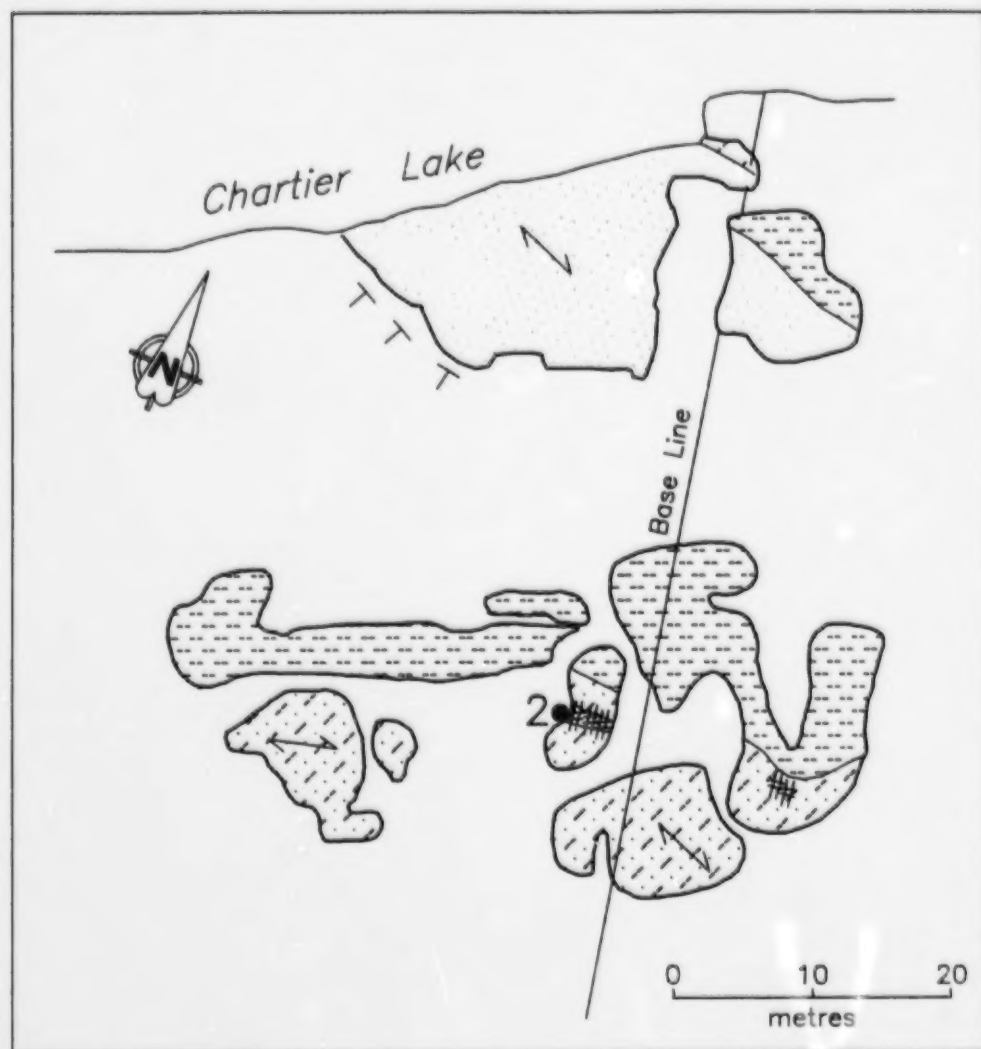


Figure 2-1: Geology and sample location map, occurrence 2.

LOCATION: 3

NAME:

UTM: 6102940N/433783E

ACCESS: Float plane to Chartier Lake and traverse

AREA: Southwest of Chartier Lake

AIRPHOTO: MB87007-42

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey over the area south of Chartier Lake in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an airborne electromagnetic and radiometric survey of the Wimapedi Lake area in 1961 (A.F. 91628). An extensive ground electromagnetic survey followed the airborne survey in the early 1960s, but little information is available in the cancelled assessment files. A ground Turam electromagnetic survey was completed over the area of the occurrence in 1971 (A.F. 90738).

GEOLOGICAL SETTING:

The area is underlain by felsic metavolcanic gneiss and amphibolite of uncertain origin. The felsic metavolcanic gneiss forms a narrow layer bordering the Herblet Lake

gneiss dome (Bailes, 1975). The occurrence is situated adjacent to a strong lineament on the southwest corner of Chartier Lake.

MINERALIZATION:

The occurrence comprises an extensive silicified and rusty weathered zone that contains finely disseminated pyrite and pyrrhotite developed within felsic metavolcanic gneiss (Fig. 3-1). The trend of the mineralized zone is generally concordant to the regional foliation.

GEOCHEMICAL DATA:

Multielement analysis of a representative chip sample from the zone contained 106 ppb Au and low base metal values.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

REFERENCES:

Assessment Files: 90738, 91624, 91628; Manitoba Industry, Trade and Mines, Mines Branch.

Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.

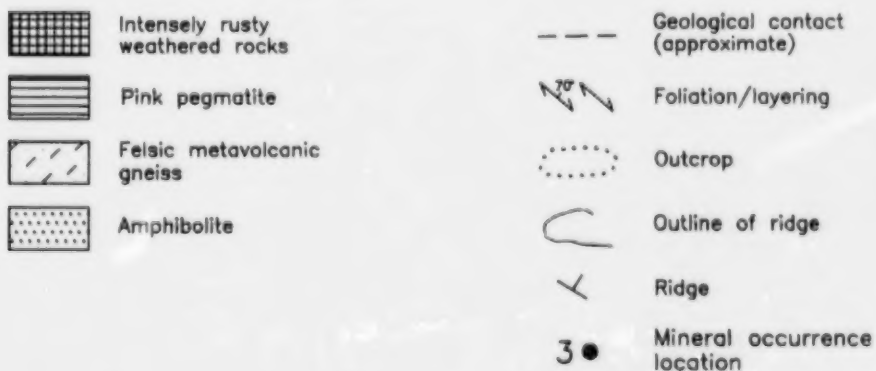
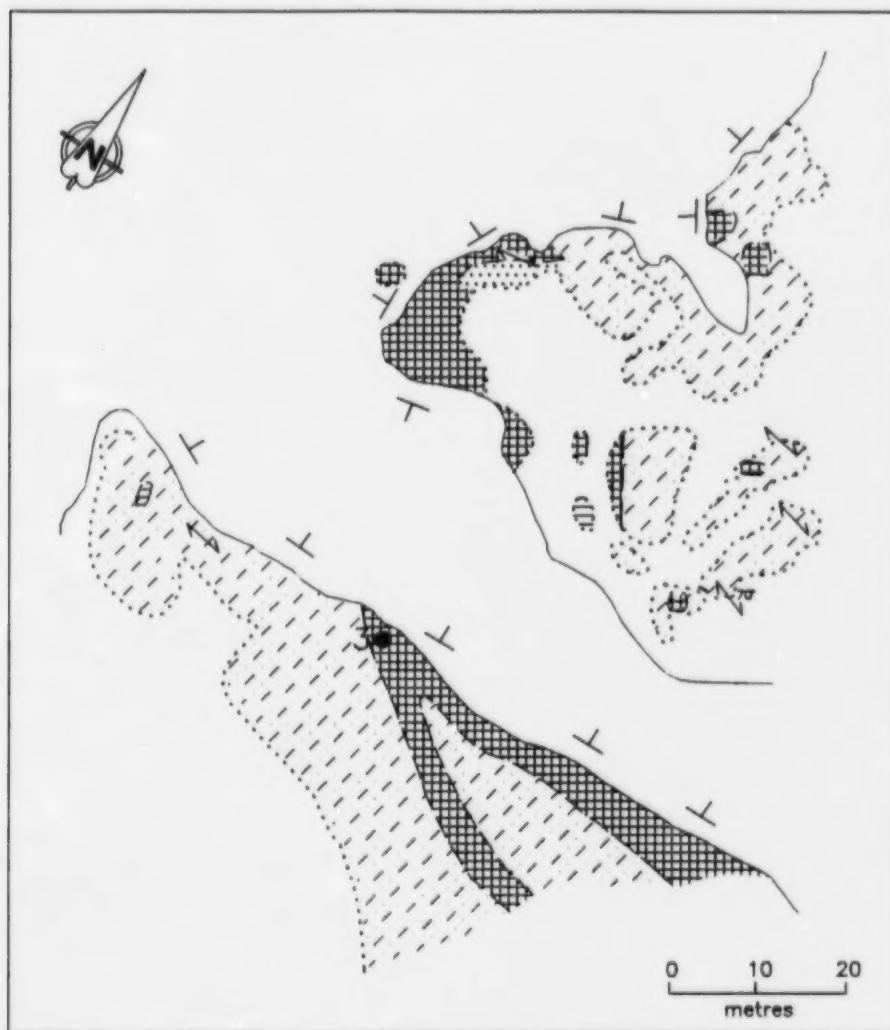


Figure 3-1: Geology and sample location map, occurrence 3.

LOCATION: 4

NAME:

UTM: 6103109N/434061E

ACCESS: Float plane to Chartier Lake

AREA: Southwest corner of Chartier Lake

AIRPHOTO: MB87007-42

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey over the area south of Chartier Lake in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an airborne electromagnetic and radiometric survey of the Wimapedi Lake area in 1961 (A.F. 91628). An extensive ground electromagnetic survey followed the airborne survey in the early 1960s, but little information is available in the cancelled assessment files. A ground Turam electromagnetic survey was completed over the area of the occurrence in 1971 (A.F. 90738). Hudson Bay drilled holes Wim-27, Wim-37 and Zyl-52 on anomalies in the general area of the occurrence. (cf. Table 13, Bailes, 1975).

GEOLOGICAL SETTING:

The area is underlain by felsic metavolcanic gneiss and amphibolite of uncertain origin. The felsic metavolcanic gneiss is truncated to the north along the shore of

Chartier Lake by white felsic pegmatite (Fig. 4-1). The felsic metavolcanic gneiss forms a narrow layer bordering the Herblet Lake gneiss dome (Bailes, 1975).

MINERALIZATION:

The felsic metavolcanic gneiss is rusty weathered near the occurrence and contains 1 to 2% disseminated pyrite and pyrrhotite. Barren, nonmineralized, white quartz veins occur within the felsic gneiss. DDH Wim-37 drilled east of the occurrence intersected 4.6 m of disseminated pyrite and graphite (Table 13, Bailes, 1975).

GEOCHEMICAL DATA:

Analysis of a representative sample of the rusty weathered felsic metavolcanic gneiss returned values of 486 ppm Cu, 65 ppm As and 37 ppb Au.

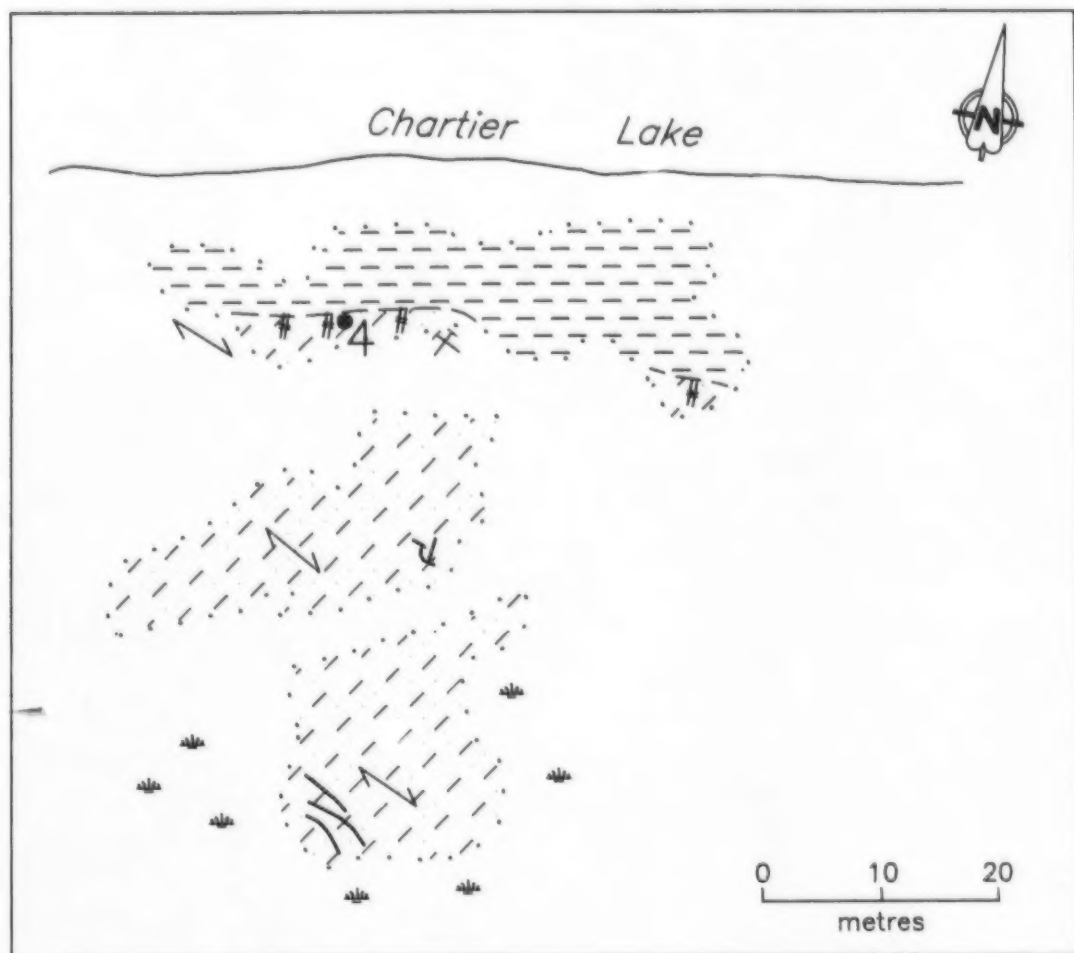
CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

REFERENCES:

Assessment Files: 90738, 91624, 91628; Manitoba Industry, Trade and Mines, Mines Branch.

Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.



Felsic metavolcanic
gneiss



White/pink pegmatite



Geological contact
(approximate)



Outcrop



Foliation/layering



Quartz vein



Rusty weathered
zone



Swamp



Mineral occurrence location

Figure 4-1: Geology and sample location map, occurrence 4.

LOCATION 5**NAME:****UTM:** 6102680N/434603E**ACCESS:** Via float plane to Chartier Lake and traverse**AREA:** South of Chartier Lake**AIRPHOTO:** MB87007-42**EXPLORATION SUMMARY:**

Canadian Nickel Company completed an airborne EM survey over the area south of Chartier Lake in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an airborne electromagnetic and radiometric survey of the Wimapedi Lake area in 1961 (A.F. 91628). An extensive ground electromagnetic survey followed the airborne survey in the early 1960s, but little information is available in the cancelled assessment files. A ground Turam electromagnetic survey was completed just north of the occurrence in 1971 (A.F. 90738).

GEOLOGICAL SETTING:

The area is underlain by massive and foliated pink

granitoid gneiss of the Herblet Lake gneiss dome. The unit forms an approximate 900 m thick layer which outcrops around the margin the Herblet Lake gneiss dome (Bailes, 1975).

MINERALIZATION:

The occurrence consists of 1% pyrite in a rusty-weathered zone with quartz pods, lenses and veins. Isolated 1 m² rusty-weathered zones occur in the vicinity of the quartz veins (Fig. 5-1).

GEOCHEMICAL DATA:

Geochemical analysis of a chip sample of the quartz vein material returned 220 ppb Au.

CLASSIFICATION:

Vein type deposit; multiple veins or lenses.

REFERENCES:

Assessment Files: 90738, 91624, 91628; Manitoba Industry, Trade and Mines, Mines Branch.

Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.



Figure 5-1: Geology and sample location map, occurrence 5.

LOCATION 6

NAME:

UTM: 6102899N/434350E

ACCESS: Via float plane to Chartier Lake and traverse

AREA: South of Chartier Lake

AIRPHOTO: MB87007-42

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey over the area south of Chartier Lake in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an airborne electromagnetic and radiometric survey of the Wimapedi Lake area in 1961 (A.F. 91628). An extensive ground electromagnetic survey followed the airborne survey in the early 1960s, but little information is available in the cancelled assessment files. HBED completed Turam electromagnetic and EM-17 surveys over the occurrence in 1971 (A.F. 90647, 90738).

GEOLOGICAL SETTING:

The area is underlain by felsic metavolcanic gneiss and amphibolite gneiss of uncertain origin (Bailes, 1975). The occurrence is hosted by amphibolite gneiss, which consists of laterally continuous 0.5 to 1.0 m thick bands of quartz-feldspar \pm magnetite interlayered with amphibolite-plagioclase-quartz-rich bands. Both felsic and mafic bands are cross-cut by white pegmatite dykes and quartz veins. Adjacent to the dykes and veins the amphibolite has been locally altered to a mineralogy of

80 to 90% garnet and 10 to 20% biotite, quartz and feldspar (Fig. 6-1; Fedikow et al., 1989).

MINERALIZATION:

Sulphide mineralization consists of 1 to 5% disseminated pyrrhotite in rusty weathered, silicified amphibolite. Quartz and white pegmatite veins that cross-cut amphibolite contain no visible sulphides. The occurrence is flanked to the north by garnetiferous rhyolite marked by rusty weathered zones containing 1% pyrite. (Fedikow et al., 1989)

GEOCHEMICAL DATA:

Geochemical analysis of a chip sample of the rusty weathered amphibolite returned 292 ppm Zn and 134 ppm Cu.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

- Assessment Files: 90647, 90738, 91624, 91628;
Manitoba Industry, Trade and Mines, Mines Branch
- Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management; Mineral Resources Division, Publication 75-2, 104 p.
- Fedikow, M.A.F., Malis, C., and Lebedynski, A. 1989: Preliminary observations on the metallogeny of the Herblet Lake and Pulver Lake Gneiss Dome Complexes, Snow Lake area; *in* Manitoba Energy and Mines, Mineral Resources Division, Report of Field Activities, 1989, p. 44-53.

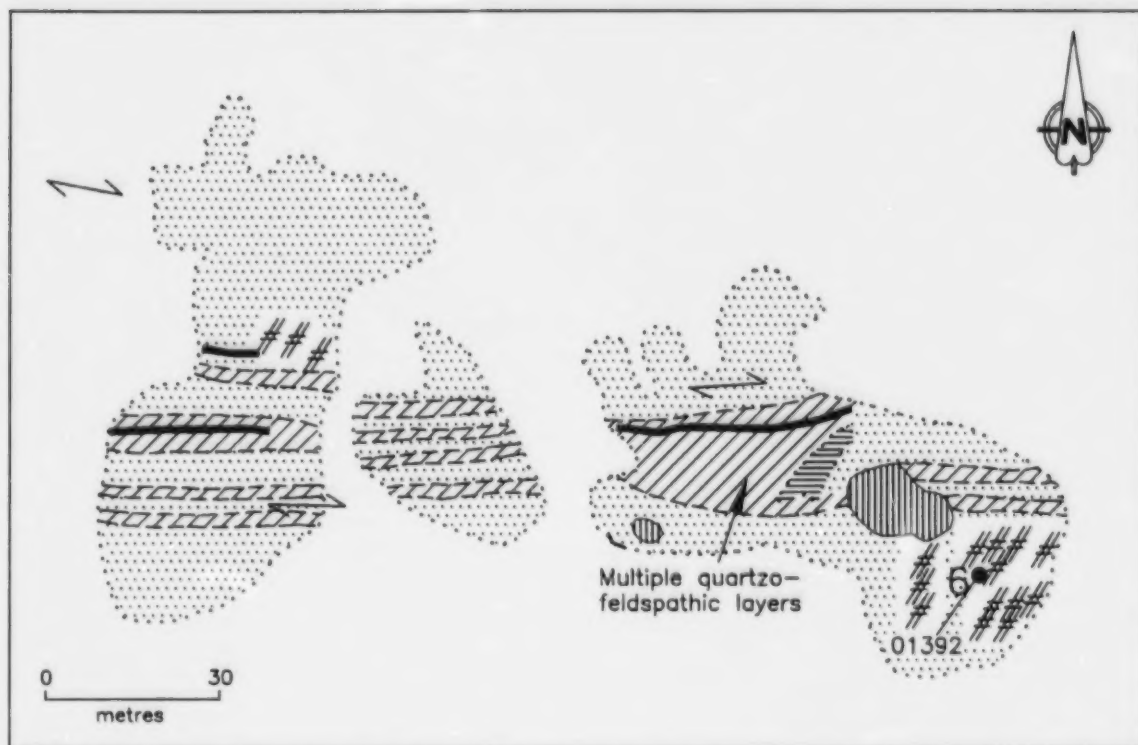


Figure 6-1: Geology and sample location map, occurrence 6.

LOCATION 7

NAME:

UTM: 6116903N/433025E

ACCESS: Via float plane to Rothstein Lake

AREA: Peninsula on south shore of Rothstein Lake

AIRPHOTO: MB87007-51

EXPLORATION SUMMARY:

There is no record of any exploration work filed for assessment for the area. The occurrence was noted by Bailes (1975) as a pyrite occurrence.

GEOLOGICAL SETTING:

The area is underlain by grey garnetiferous lit-par-lit gneiss of the Burntwood Group and gneissic granodiorite and monzogranite (Fig. 7-1). The granitic rocks are interpreted as being produced by partial anatexis during regional metamorphism of Burntwood paragneisses (Fig. 7-1; Bailes, 1975).

MINERALIZATION:

The occurrence consists of a rusty weathered zone containing 1% disseminated pyrite in grey garnetiferous gneiss. The gneiss is cut by stringers and dykes of granodiorite. Weak rusty weathering material occurs in outcrop in the general vicinity of the occurrence.

GEOCHEMICAL DATA:

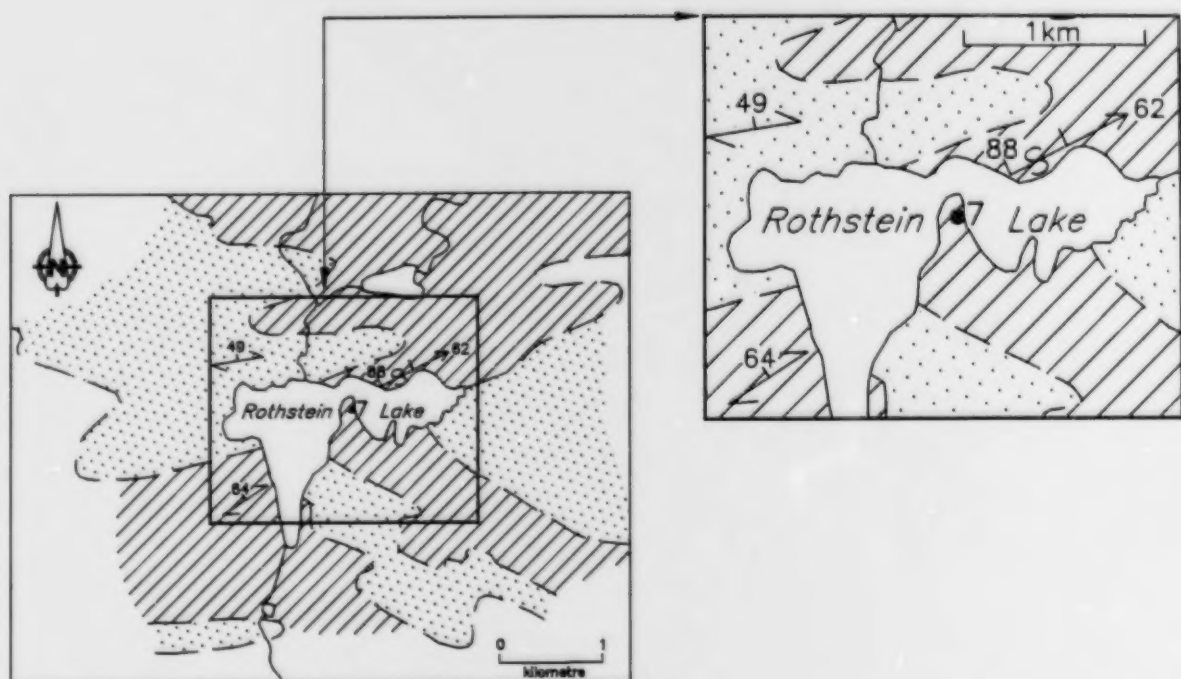
Analysis of a representative rock chip sample returned 110 ppm Zn and 46 ppm Cu.

CLASSIFICATION:


Disseminated mineralization - not classified.

REFERENCES:


Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.



INTRUSIVE ROCKS

-  Gneissic granodiorite and monzogranite; tonalitic orthogneiss

BURNTWOOD GROUP


-  Greywacke-derived gneiss


- — Geological contact (approximate)


Geology after Bailes (1975).

-  Gneissosity (inclined)

MINOR FOLDS

-  Axis (plunge known)

-  Axial surface (inclined)

-  S-asymmetrical


-  Mineral occurrence location

Figure 7-1: Geological setting of occurrence 7.

LOCATION 8

NAME:

UTM: 6098363N/421429E

ACCESS: Float plane to Lighthouse Lake and traverse

AREA: North of Lighthouse Lake

AIRPHOTO: MB87011-184

EXPLORATION SUMMARY:

Canadian Nickel Company conducted an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an Apex electromagnetic survey on the Zyl claims just north of the occurrence in 1980 (A.F. 92465).

Bailes (1975) noted the pyrite-chalcopryrite occurrence at this locality.

GEOLOGICAL SETTING:

The area is underlain by grey siliceous paragneiss and buff feldspathic paragneiss of the Missi Group. Pink quartzo-feldspathic Missi Group gneiss forms long linear outcrop ridges which separate siliceous paragneiss from feldspathic paragneiss in the Lighthouse and

Huppe lakes area (Fig. 8-1). The axis of an overturned F₃ anticline is situated approximately 200 m south of the occurrence. (Bailes, 1975)

MINERALIZATION:

A mineralized zone buried beneath moss and soil occurs sporadically for a length of approximately 40 m with a minimum width at surface of 15 m. Mineralization of 1 to 3% fine- to very fine-grained pyrite and chalcopryrite is hosted by siliceous biotite gneiss.

GEOCHEMICAL DATA:

Analysis of two rock chip samples returned maximum values of 97 ppm Zn and 96 ppm Cu.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files: 91624, 92465; Manitoba Industry, Trade and Mines, Mines Branch.

Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.

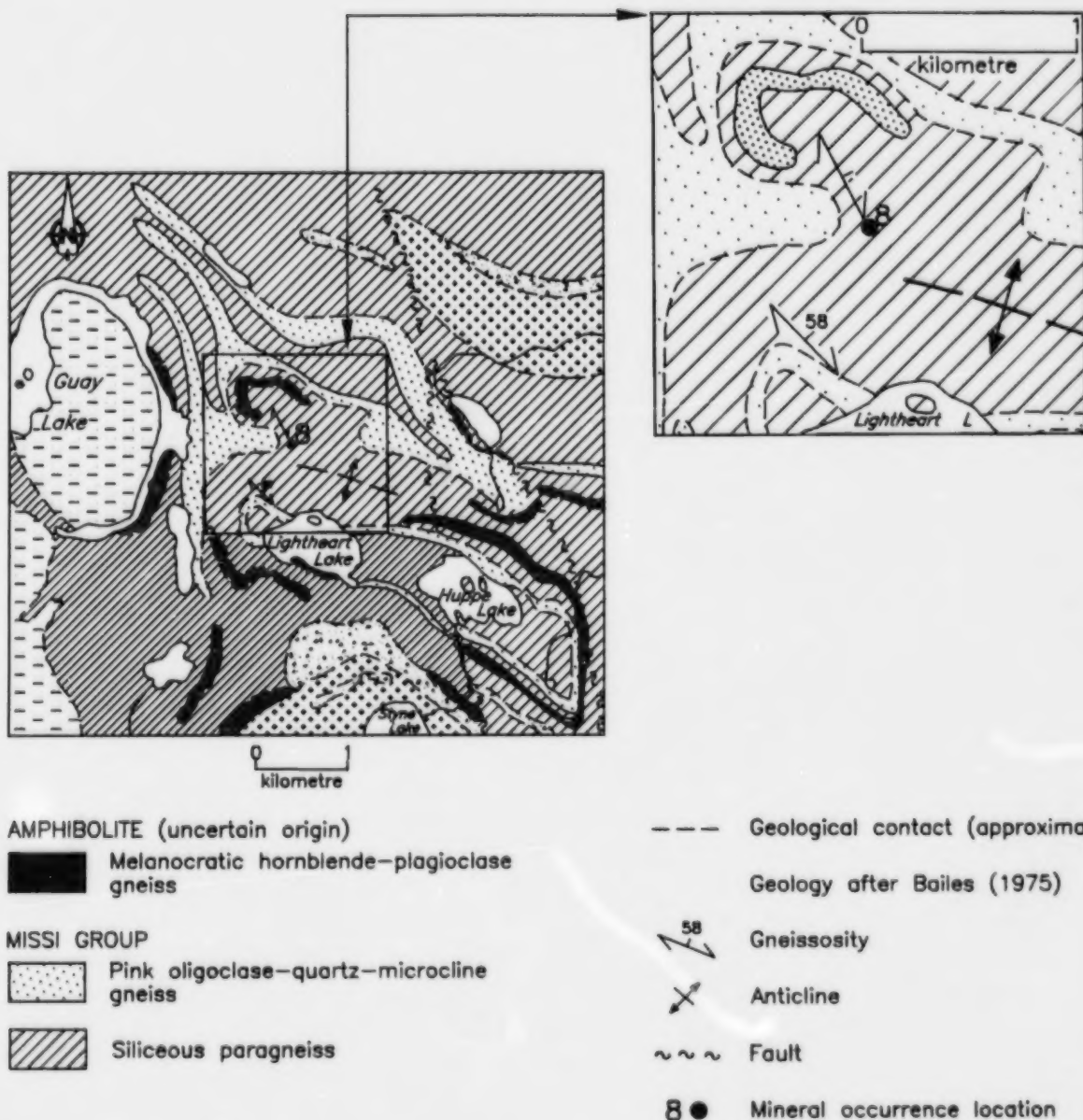


Figure 8-1: Geological setting of occurrence 8.

LOCATION 9

NAME: Wim deposit

UTM: 6097911N/433185E

ACCESS: Float plane to Zoratti Lake and traverse

AREA: Southwest of Zoratti Lake

AIRPHOTO: MB87007-39

EXPLORATION SUMMARY:

HBED completed an airborne electromagnetic and radiometric survey of the Guay-Wimapedi lakes area in 1961 (A.F. 91628). An extensive ground follow-up program of staking, linecutting, geophysics and diamond drilling was conducted over more significant anomalies (Bailes, 1975). B. McFadden staked Wim 587 in 1961 and later that year assigned the claim to HBED. The Wim deposit was discovered in January 1962 by drilling of an electromagnetic anomaly. Subsequent drilling between 1962 and 1969 outlined an orebody of 988 600 tonnes grading 2.91% copper and trace zinc to the 640 m level. Claim Wim 587 was assigned to Hudson Bay Mining and Smelting Co. Limited in 1968. Claims covering the Wim deposit were converted to a 21 year lease (M9037) later in 1968 and to a 10 year explored area lease (EAL #1) in 1975 (M.I. Card NTS 63N/1 Cu1). In 1996 the property reverted back to claim status and was reassigned to HBED.

GEOLOGICAL SETTING:

Bailes (1975) identified the Wim deposit host rocks to be felsic volcanic gneiss (rhyolite protolith). Pink granitoid gneiss of the Herblet Lake gneiss dome underlies the area north of the deposit. South of the gneiss dome, the felsic gneiss is interlayered with amphibole-plagioclase gneiss interpreted to represent mafic volcanic rocks (Fedikow and Ziprick, 1991). Detailed mapping by Fedikow and Ziprick (1991) subdivided the host felsic gneisses into: massive aphyric gneiss, quartz phyrlic rhyolite gneiss locally interlayered with rhyolite breccia, and quartz-feldspar gneiss (Fig. 9-1, in pocket). The up-plunge surface projection of the Wim deposit places the mineralization at or close to the contact between massive and quartz phyrlic rhyolite. A laterally continuous, unaltered, amphibole-plagioclase-magnetite unit which occurs south of the deposit is interpreted to represent a mafic intrusion (Fedikow and Ziprick, 1991).

Rocks in the area are foliated to gneissose, with the exception of a locally massive pink granitoid gneiss of the gneiss dome. Foliations trend northwest and have a moderate to steep dip to the northeast. Northwest of the deposit, foliations progressively shift to the north

and northeast as the rim gneisses wrap around the gneiss dome. Lineations in the area plunge 57° to 63° to the northeast and northwest. The attitude of the northwest lineations are similar to the plunge of the Wim mineralization (Fedikow and Ziprick, 1991).

MINERALIZATION:

The Wim massive sulphide deposit is podiform to lenticular and composed of disseminated to solid, recrystallized, medium- to coarse-grained, pyrite, pyrrhotite, chalcopyrite and sphalerite (Fig. 9-2). The deposit has a maximum strike length of 305 m and a maximum width of 15.4 m. General proportions of the ore are: pyrite - trace to 70%; pyrrhotite - trace to 80%; chalcopyrite - trace to 40%; and sphalerite - trace to 7%. Chalcopyrite and iron sulphides also take the form of fracture fillings, veinlets and laminae. Undiluted geological reserves stood at 1 394 603 tonnes at 2.59% Cu, 0.4% Zn, 1.7 g/t Au and 8.2 g/t Ag. (Fedikow and Ziprick, 1991).

GEOCHEMICAL DATA:

The Wim massive sulphide deposit has a well developed associated alteration zone. Iron oxide stain represents the predominant alteration type in outcrop, especially in the area of the up-plunge surface projection of the mineralized zone. Less common alteration types include: garnet-anthophyllite-cordierite, muscovite-sillimanite, and garnet zones which occur approximately 1.5 km southeast of the deposit along the geophysical signature which marks the Wim mineralized zone.

Exploration drilling by HBED in the area intersected alteration similar to that exposed in outcrop. Medium- to coarse-grained anthophyllite-cordierite-garnet with disseminated and vein chalcopyrite and pyrrhotite were intersected over a 15 to 20 m core length down-plunge from the mineralized zone (Fedikow and Ziprick, 1991; Fedikow et al., 1991).

CLASSIFICATION:

Stratabound massive sulphide type deposit; volcanic rock associated.

REFERENCES:

- Assessment Files: 91628; Manitoba Industry, Trade and Mines, Mines Branch.
- Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.

Fedikow, M.A.F. and Ziprick, D. 1991: The geological setting of the Wim massive sulphide type Cu deposit, Snow Lake area (NTS 63N/1); *in* Manitoba Energy and Mines, Minerals Division, Report of Activities, 1991, p. 41-42.

Mineral Inventory Card NTS 63N/1 Cu1; Manitoba Industry, Trade and Mines, Geological Survey.

Fedikow, M.A.F., Ziehlke, D.V., and Ziprick, D. 1991: Geology and alteration at the Wim massive sulphide type Cu deposit (part of NTS 63N/1); Manitoba Energy and Mines, Preliminary Map 1991S-1, scale 1:5000.

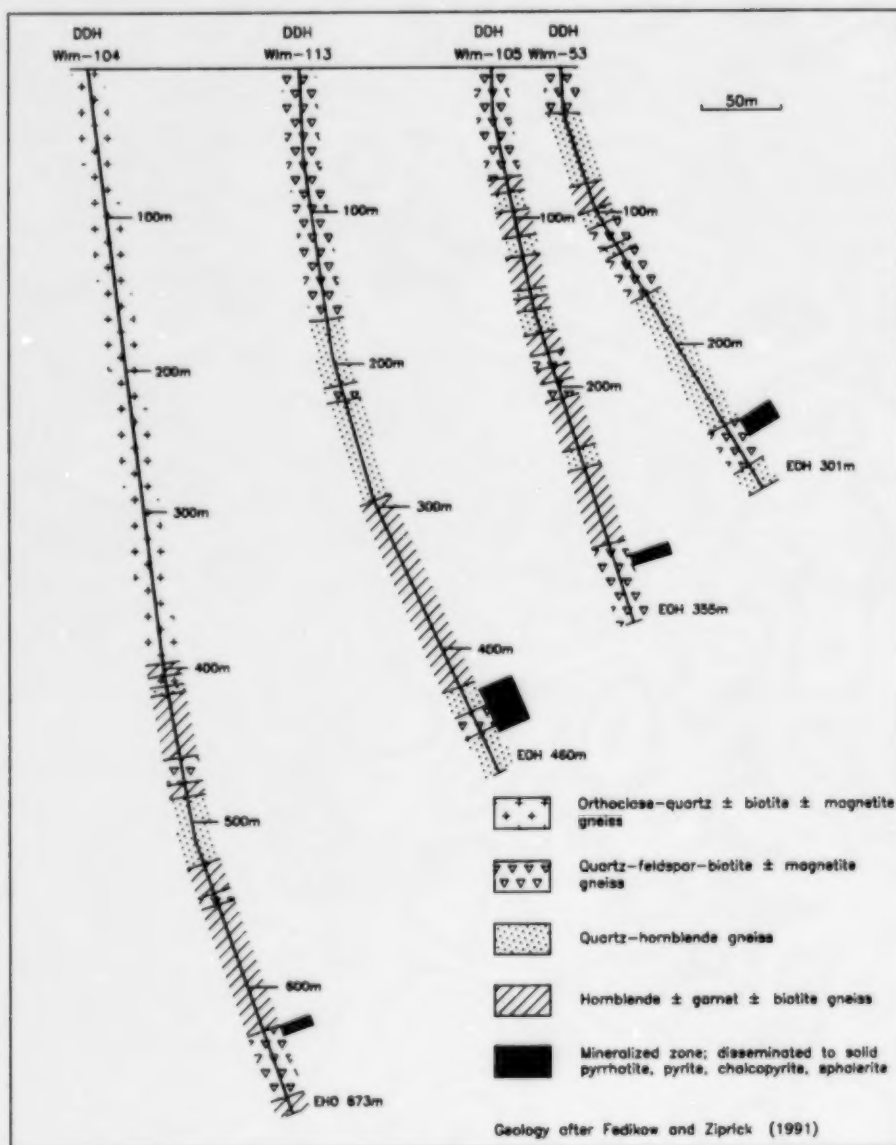


Figure 9-2: Geological cross section through the Wim Cu deposit.

LOCATION: 10

NAME: (A. F. - Mineralization intersected in drill core)

UTM: 6108540N/407211E

ACCESS: Logging road from Sherridon to Limestone Creek and boat to Limestone Point Lake

AREA: Limestone Point Lake

AIRPHOTO: A26368-67

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

The vicinity of the occurrence has been staked intermittently since 1959. HBED conducted HLEM and drilling in the area in 1959-60 (A.F. 91573). DDH Tug-158 is believed to have been drilled on the occurrence at this time, but there is no record in the cancelled assessment files. HBED flew an EM-30 airborne survey in the Sherridon-Limestone Pt. Lake area in 1979-81. The SHE claims were staked to cover untested anomalies in "Sherridon" type rocks. Linecutting and ground EM surveys were carried out in 1983 (A.F. 92838). In 1984, HBED drilled hole She-59, approximately 330 m northwest of Tug-158 on the same anomaly (A.F. 92758). Two shorter en échelon anomalies located just north of the main anomaly were not drilled. Shell Canada Resources conducted an airborne EM and magnetometer survey of the Batty Lake and Limestone Pt. Lake area in 1980, and later that same year completed geological mapping and prospecting (A.F. 92513).

GEOLOGICAL SETTING:

The area is underlain by Missi Group quartz-rich paragneiss (Fig. 10-1). The anomaly is located at or near the contact with the Limestone Creek high-strain zone.

This zone consists of discontinuous structural slices of various rock types, interpreted to occupy the base of a nappe complex of the Kisseynew Belt core zone (Zwanzig and Schledewitz, 1992). Rocks within the high-strain zone consist of quartz-garnet gneiss \pm amphibole and cordierite-anthophyllite-bearing rocks, included as part of the Sherridon Suite. (Zwanzig and Schledewitz, 1992).

The log for HBED drill hole She-59 reports sheared and altered schistose and gneissic rocks with pegmatite and quartz bands/sections (A.F. 92758).

MINERALIZATION:

HBED drill hole She-59 intersected narrow (1-52) cm intervals of minor - 20% graphite and trace - 2% pyrite at a vertical depth between 27 and 32 m. The mineralized zone is hosted by pegmatite and sheared quartz-feldspar-carbonate-talc-biotite-epidote schist (A.F. 92758).

GEOCHEMICAL DATA:

The assay record for DDH She-59 contains no reported values.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. The mineralization is interpreted to be a graphitic sulphide facies iron formation.



REFERENCES:

Assessment Files: 91573, 91624, 92513, 92758, 92838; Manitoba Industry, Trade and Mines, Mines Branch.


Zwanzig, H.V. and Schledewitz, D.C.P. 1992: Geology of the Kississing-Batty lakes area: interim report; Manitoba Energy and Mines, Minerals Division, Open File Report OF92-2, 87 p.




INTRUSIVE ROCKS

-  Quartz diorite
-  Tonalitic orthogneiss


MISSI GROUP

-  Quartz-rich paragneiss

ROCKS OF UNCERTAIN AGE

-  Quartz-garnet gneiss ± amphibole cordierite-anthophyllite rock

BURNTWOOD GROUP

-  Greywacke-derived gneiss

— — Geological contact (approximate)

— — — Fault zone

 Foliation/layering

Geology after Zwanzig and Schledewitz (1992).

 EM conductor (A.F. 92838)

 Drillhole (A.F. 92758)

10 ● Mineral occurrence location

Figure 10-1: Geological setting of occurrence 10.

LOCATION 11

NAME:

UTM: 6111497N/404517E

ACCESS: Logging road from Sherridon to Limestone Creek and boat to File River

AREA: File River

AIRPHOTO: A26367-188

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

The vicinity of the occurrence has been staked intermittently since 1959. A HLEM survey conducted in 1959-60 by HBED defined several anomalies of various sizes in the area (A.F. 91573). DDHs Tug-169, Tug-171, Tug-173, Tug-175 and Tug-181 were drilled in 1960 (A.F. 91573, drill logs courtesy HBED). An airborne EM and magnetometer survey conducted in 1980 for Shell Canada Resources Ltd. was followed later that year by geologic prospecting in the area (A.F. 92513).

GEOLOGICAL SETTING:

The area is underlain by graphite-bearing, meta-greywacke-derived metatexite \pm garnet \pm sillimanite \pm cordierite of the Burntwood Group. This unit is overlain by quartz-rich paragneiss of the Missi Group on the east and underlain by thin wedges of tonalitic to granodioritic gneiss and intermediate gneiss (Fig. 11-1). The Limestone Creek high-strain zone occurs

just west of the occurrence area (Zwanzig and Schledewitz, 1992). Logs for all the drill holes report quartz-biotite-garnet gneiss \pm feldspar \pm hornblende with "granitized" and/or pegmatite sections. DDH Tug-169 intersected hornblende-biotite-garnet gneiss at the bottom of the hole at 47 m (HBED drill logs).

MINERALIZATION:

All drill holes intersected one or more zones (0.3 to 4.2 m in length) of graphite \pm pyrite in quartz-biotite-garnet gneiss \pm hornblende. Some intersections contained sections of near solid graphite. DDH Tug-181 (located northeast of Tug-173) intersected a 10 cm section containing trace chalcopyrite in a siliceous hornblende-biotite gneiss with scattered pyrrhotite (HBED drill logs).

GEOCHEMICAL DATA:

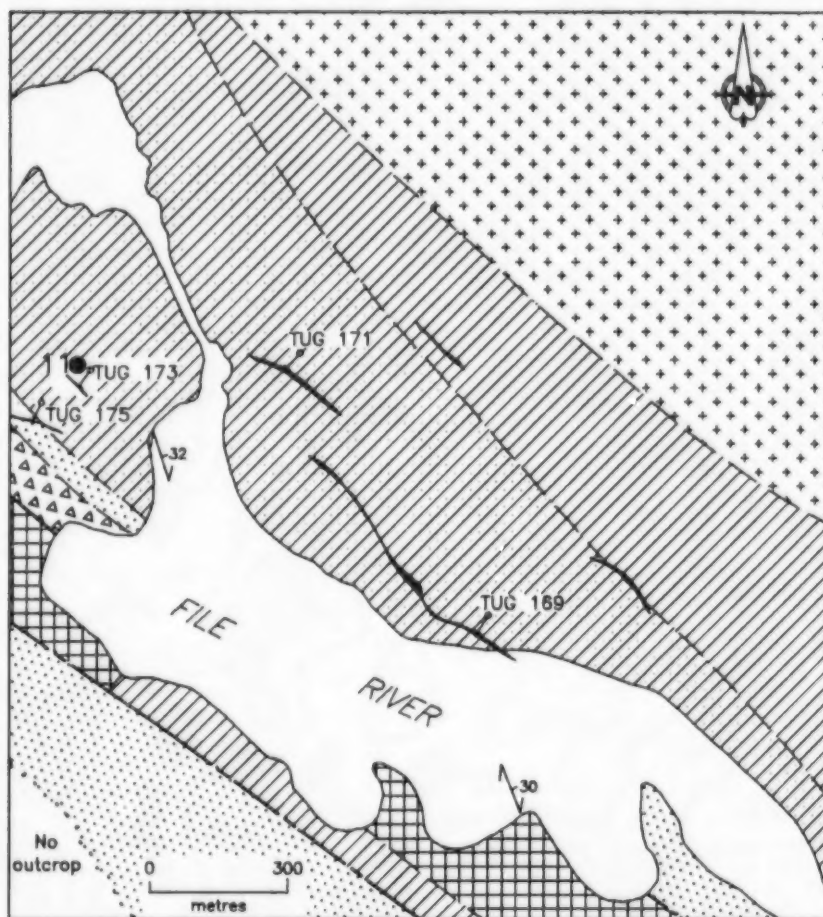
The assay records accompanying the drill logs contained no reported values.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

REFERENCES:

- Assessment Files: 91573, 91624, 92513; Manitoba Industry, Trade and Mines, Mines Branch.
- Zwanzig, H.V. and Schledewitz, D.C.P. 1992: Geology of the Kississing-Batty lakes area: interim report; Manitoba Energy and Mines, Minerals Division, Open File Report OF92-2, 87 p.



INTRUSIVE ROCKS



Quartz diorite



Tonalitic gneissic/orthogneiss

MISSI GROUP



Quartz-rich paragneiss

ROCKS OF UNCERTAIN AGE



Quartz-garnet gneiss ± amphibole
cordierite-anthophyllite rock



Intermediate gneiss

BURNTWOOD GROUP



Metagreywacke, migmatite, metatexite
derived from greywacke

— — Geological contact
(approximate)

— — Fault zone



Foliation/layering

Geology after Zwanzig and
Schledewitz (1992).



EM conductor (A.F. 91573)



Drillhole (A.F. 91573)



Mineral occurrence location

Figure 11-1: Geological setting of occurrence 11.

LOCATION: 12**NAME:**

UTM: 6110501N/405282E

ACCESS: Logging road from Sherridon to Limestone Creek and boat to File River

AREA: File River

AIRPHOTO: A26368-65

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED conducted a HLEM survey over the area just north of the occurrence in 1959-60 (A.F. 91573).

An airborne EM and magnetometer survey conducted in 1980 for Shell Canada Resources Ltd. was followed later that year by geological prospecting in the area (A. F. 92513).

GEOLOGICAL SETTING:

The mineral occurrence is hosted by quartz-garnet gneiss \pm amphibole and is situated within the Limestone Creek high-strain zone (Fig. 12-1). This zone comprises discontinuous structural slices interpreted as the base of the nappe complex of the Kisseynew Belt core zone that was transported southwest during D₂ over Missi Group rocks (Zwanzig and Schledewitz, 1992). The occurrence is hosted by coarse grained quartz-feldspar-biotite-garnet-anthophyllite-cordierite gneiss within layered (cm-m) quartz

rich gneiss (Ostry, 1989).

MINERALIZATION:

The occurrence consists of a 1 to 2 m thick mineralized zone containing 1 to 2% blebs and disseminations of fine-grained pyrrhotite \pm chalcopyrite and up to 5% fine- to medium-grained pyrite as disseminations, blebs and fracture fillings. Field investigations noted more than one mineralized layer (Ostry, 1989).

GEOCHEMICAL DATA:

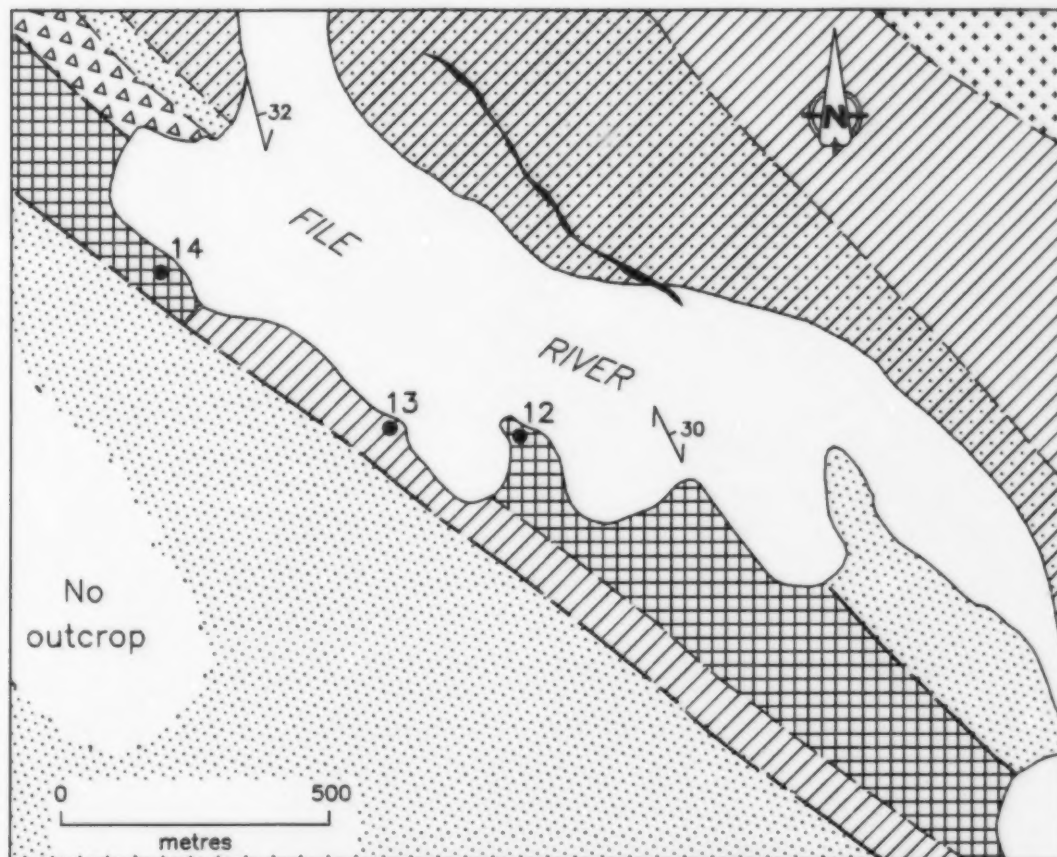
Geochemical analysis of two mineralized grab samples returned up to 473 ppm Cu and low Zn, Ni and Co values (Ostry, 1989).

CLASSIFICATION:



Chemical sediment type deposit; sulphide facies iron formation.

REFERENCES:


- Assessment Files: 91573, 91624, 92513; Manitoba Industry, Trade and Mines, Mines Branch.
- Ostry, G. 1989: Mineral investigations in the Kisseynew gneiss terrane; *in* Manitoba Energy and Mines, Minerals Division, Report of Activities, 1989, p. 59-63.
- Zwanzig, H.V. and Schledewitz, D.C.P. 1992 Geology of the Kississing-Batty lakes area: interim report; Manitoba Energy and Mines, Minerals Division, Open File Report OF92-2, 87 p.




INTRUSIVE ROCKS


-  Quartz diorite
-  Tonalitic gneissic/orthogneiss

MISSI GROUP


-  Quartz-rich paragneiss

ROCKS OF UNCERTAIN AGE

-  Quartz - garnet \pm amphibole
cordierite-anthophyllite rock


-  Intermediate gneiss

BURNTWOOD GROUP

-  Metagreywacke, migmatite, metatexite
derived from greywacke

— — Geological contact (approximate)

— Fault zone

 30 Foliation/layering

Geology after Zwanzig and
Schledewitz (1992)

 EM conductor (A.F. 91573)

12 • Mineral occurrence location

Figure 12-1: Geological setting of occurrences 12 to 14.

LOCATION 13

NAME:

UTM: 6110501N/404990E

ACCESS: Logging road from Sherridon to Limestone Creek and boat to File River

AREA: File River

AIRPHOTO: A26368-65

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED conducted a HLEM survey over the area just north of the occurrence in 1959-60 (A.F. 91573).

An airborne EM and magnetometer survey conducted in 1980 for Shell Canada Resources Ltd. was followed later that year by geological prospecting in the area (A.F. 92513).

GEOLOGICAL SETTING:

The area of the occurrence is underlain by a thin layer of Missi Group quartz-rich paragneiss that is in fault contact on the southwest margin with tonalitic orthogneiss of the Batty Lake complex (Zwanzig and Schledewitz, 1992). An anthophyllite-cordierite-bearing gneiss unit of the Limestone Creek high-strain zone occurs <100 m to the north, under the File River (Fig. 12-1).

MINERALIZATION:

The occurrence consists of <1% fine-grained disseminated pyrite, hosted by medium- to coarse-grained quartz-feldspar-biotite-garnet-magnetite gneiss. The mineralized zone is situated adjacent to a pegmatite dyke. The thickness of the zone is not known (Ostry, 1989).

GEOCHEMICAL DATA:

Geochemical analysis of a mineralized grab sample returned 70 ppm Cu and 53 ppm Zn (Ostry, 1989)

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

- Assessment Files: 91573, 91624, 92513; Manitoba Industry, Trade and Mines, Mines Branch.
- Ostry, G. 1989: Mineral investigations in the Kiseynew gneiss terrane; *in* Manitoba Energy and Mines, Minerals Division, Report of Activities, 1989, p. 59-63.
- Zwanzig, H.V. and Schledewitz, D.C.P. 1992: Geology of the Kiseynew-Batty lakes area: interim report; Manitoba Energy and Mines, Minerals Division, Open File Report OF92-2, 87 p.

LOCATION 14**NAME:**

UTM: 6110879N/404491E

ACCESS: Logging road from Sherridon to Limestone Creek and boat to
File River

AREA: File River

AIRPHOTO: A26367-188

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED conducted a HLEM survey over the area north and east of the occurrence in 1959-60 (A.F. 91573).

An airborne EM and magnetometer survey conducted in 1980 for Shell Canada Resources Ltd. was followed later that year by geological prospecting in the area (A.F. 92513).

GEOLOGICAL SETTING:

The occurrence is hosted by quartz-garnet gneiss \pm amphibole and is located within the Limestone Creek high-strain zone. This unit is in fault contact with quartz-rich tonalitic gneiss about 75 m southwest of the occurrence (Fig. 12-1). A thin discontinuous slice of Missi Group paragneiss underlies the area 100 m

southeast of the occurrence (Zwanzig and Schledewitz, 1992).

MINERALIZATION:

The occurrence consists of an approximately 1 m thick zone containing 1% very fine-grained disseminated pyrrhotite. The mineralization is hosted by fine- to medium-grained siliceous quartz-feldspar-biotite gneiss \pm magnetite. The mineralized zone is situated adjacent to a pegmatite dyke (Ostry, 1989).

GEOCHEMICAL DATA:

Geochemical analysis of a mineralized grab sample returned 58 ppm Cu and 67 ppm Zn (Ostry, 1989).

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

- Assessment Files: 91573, 91624, 92513; Manitoba Industry, Trade and Mines, Mines Branch.
- Ostry, G. 1989: Mineral investigations in the Kiseynew gneiss terrane; *in* Manitoba Energy and Mines, Mineral Division, Report of Activities, 1989, p. 59-63.
- Zwanzig, H.V. and Schledewitz D.C.P. 1992: Geology of the Kiseynew-Batty lakes area: interim report; Manitoba Energy and Mines, Minerals Division, Open File Report OF92-2, 87 p.

LOCATION 15

NAME:

UTM: 6108268N/404845E

ACCESS: Logging road from Sherridon to Limestone Creek and boat to Limestone Point Lake

AREA: Limestone Point Lake

AIRPHOTO: A26367-186

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

An airborne EM and magnetometer survey conducted in 1980 for Shell Canada Resources Ltd. was followed later that year by geological prospecting in the area (A.F. 92513).

GEOLOGICAL SETTING:

The area of the occurrence is underlain by quartz-rich tonalitic orthogneiss (Zwanzig and Schledewitz, 1992).

MINERALIZATION:

Ostry (1989) describes the occurrence as a 2 to 4 m

wide zone containing <1% pyrrhotite, hosted by a medium- to coarse-grained, quartz-rich, quartz-feldspar-biotite-garnet gneiss (Fig. 15-1). The zone contains ≤60% garnet, ≤40% biotite as well as carbonate and calc-silicate minerals.

GEOCHEMICAL DATA:

Geochemical analysis of a mineralized grab sample returned 109 ppm Zn and 73 ppm Cu (Ostry, 1989).

CLASSIFICATION:

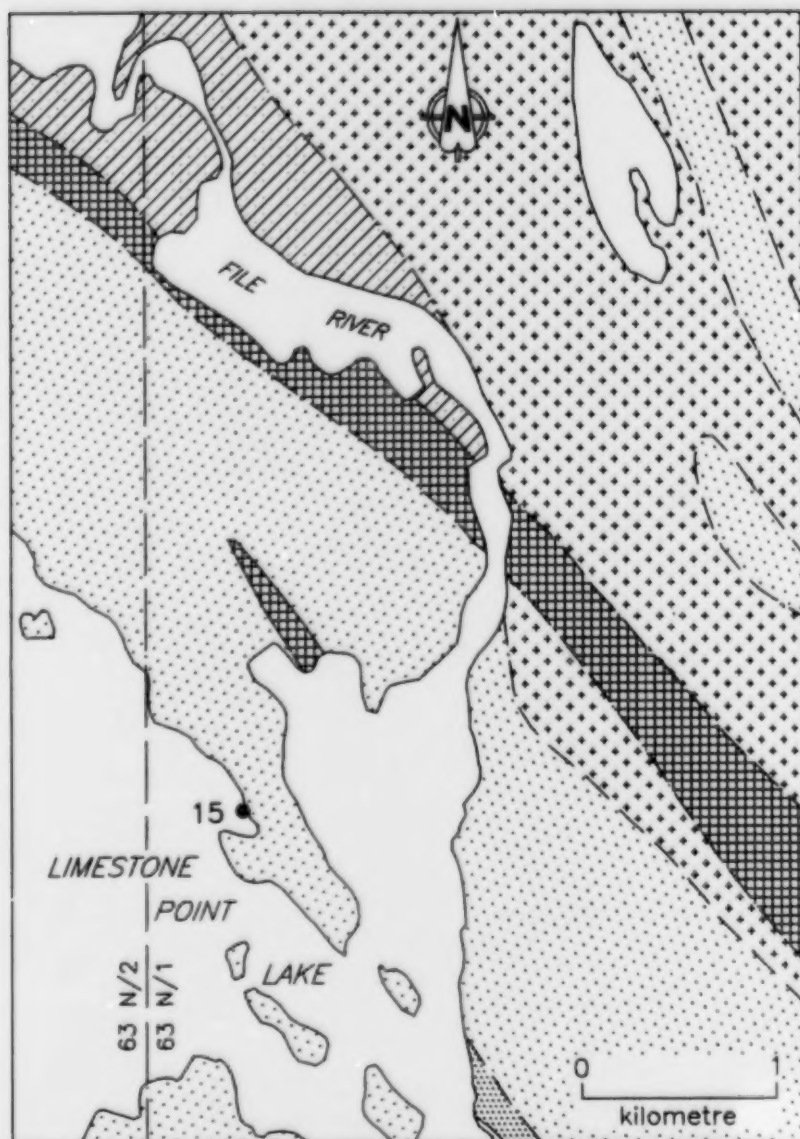
Disseminated mineralization - not classified.





REFERENCES:

Assessment Files: 91624, 92513; Manitoba Industry, Trade and Mines, Mines Branch.

Ostry, G. 1989: Mineral investigations in the Kisseynew gneiss terrane; *in* Manitoba Energy and Mines, Minerals Division, Report of Activities, 1989, p. 59-63.

Zwanzig, H.V. and Schledewitz, D.C.P. 1992: Geology of the Kississing-Batty lakes area: interim report; Manitoba Energy and Mines, Minerals Division, Open File Report OF92-2, 87 p.



-  Felsic intrusive rock/
orthogneiss
-  Quartzofeldspathic
gneiss
-  Garnet-anthophyllite
rock
-  Amphibolite



-  Greywacke gneiss
-  Geological contact
(approximate)
- Geology after Zwanzig and
Schledewitz (1992)
- 15 ● Mineral occurrence
location

Figure 15-1: Geological setting of occurrence 15.

LOCATION 16

NAME: (Mineralization intersected in drill core)

UTM: 6100646N/430957E

ACCESS: Float plane to Compton Lake and traverse

AREA: East of Compton Lake

AIRPHOTO: MB87007-135

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an airborne EM and radiometric survey of the Guay-Wimapedi lakes area in 1961 (A.F. 91628). An extensive ground follow-up program of staking, linecutting, geophysics and diamond drilling was conducted over the more significant anomalies. DDH Wim-55 was drilled to test the geophysical anomaly in 1962 (Bailes, 1975).

GEOLOGICAL SETTING:

The geophysical anomaly plots at or near the contact of feldspathic paragneiss of Missi Group and melano-

cratic hornblende-plagioclase gneiss of uncertain origin (Fig. 16-1). The felsic metavolcanic gneiss unit which hosts the Wim deposit is located approximately 200 m east of the occurrence (Bailes, 1975).

MINERALIZATION:

DDH Wim-55 was drilled to a depth of 59.4 m and is reported to have intersected 3.9 m of siliceous chlorite-biotite gneiss with disseminated to near solid graphite and pyrite (Bailes, 1975, p. 98).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files: 91624, 91628; Manitoba Industry, Trade and Mines, Mines Branch.

Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.

LOCATION 17

NAME: (Mineralization intersected in drill core)

UTM: 6099669N/431178E

ACCESS: Float plane to Compton Lake and traverse

AREA: East of Compton Lake

AIRPHOTO: MB87007-135

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an airborne EM and radiometric survey of the Guay-Wimapedi lakes area in 1961 (A.F. 91628). An extensive ground follow-up program of staking, linecutting, geophysics and diamond drilling was conducted over the more significant anomalies. DDH Wim-57A was drilled to test the geophysical anomaly in 1962 (Bailes, 1975).

GEOLOGICAL SETTING:

The geophysical anomaly plots at or near the contact between Missi Group feldspathic paragneiss and amphibolite of uncertain origin. Pink felsic pegmatite forms stratiform lenses within paragneiss and amphi-

bolite west and east of the occurrence respectively (Fig. 16-1). The felsic metavolcanic gneiss unit which hosts the Wim deposit is located approximately 100 m east of the occurrence (Bailes, 1975).

MINERALIZATION:

DDH Wim-57A was drilled to a depth of 53.6 m and is reported to have intersected 4.3 m of fine-grained quartz-biotite gneiss with chlorite and talc-rich sections and disseminated to near solid graphite and pyrite (Bailes, 1975, p. 98)

GEOCHEMICAL DATA:

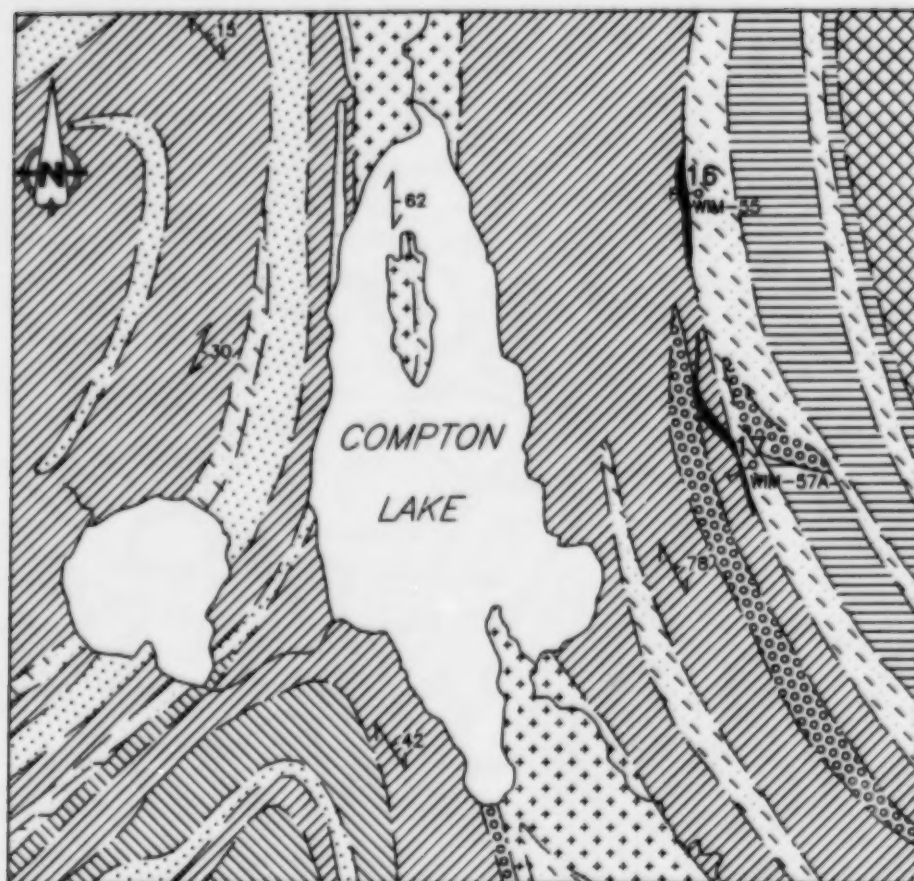
None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.


REFERENCES:

- Assessment Files: 91624, 91628; Manitoba Industry, Trade and Mines, Mines Branch.
- Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.



0 500
metres


HERBLET LAKE GNEISS DOME


 Pink granitoid oligoclase-microcline gneiss

INTRUSIVE ROCKS


 Felsic pegmatite


AMPHIBOLITE (UNCERTAIN ORIGIN)

 Leucocratic plagioclase-hornblende-microcline-quartz gneiss


 Melanocratic hornblende-plagioclase gneiss

MISSI GROUP


 Pink oligoclase-quartz-microcline gneiss


 Meta-arkose and meta-subgreywacke

BURNTWOOD SUITE


 Meta-greywacke


METAVOLCANIC ROCKS 1.9 GA


 Felsic metavolcanic gneiss

 Geological contact (approximate)

 Foliation

 Geology after Bailes (1975).

 EM conductor (Bailes, 1975)

 Drillhole (Bailes, 1975)

16 Mineral occurrence location

Figure 16-1: Geological setting of occurrences 16 and 17.

LOCATION 18

NAME: (Mineralization intersected in drill core)

UTM: 6097638N/431476E

ACCESS: Float plane to Compton Lake and traverse

AREA: Snow Creek

AIRPHOTO: MB87007-137

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an airborne EM and radiometric survey of the Guay-Wimapedi lakes area in 1961 (A.F. 91628). An extensive ground follow-up program of staking, linecutting, geophysics and diamond drilling was conducted over the more significant anomalies. DDH Wim-9 was drilled to test the geophysical anomaly in 1962 (Bailes, 1975, p. 98).

GEOLOGICAL SETTING:

The geophysical anomaly plots near the contact between Burntwood Group grey garnetiferous paragneiss and Missi Group feldspathic paragneiss (Fig. 18-1). An apparent stratiform lens of amphibolite

is located approximately 100 m northeast of the occurrence (Bailes, 1975).

MINERALIZATION:

DDH Wim-9 was drilled to a depth of 69.8 m and is reported to have intersected 4.6 m of disseminated to solid pyrrhotite and pyrite with graphitic horizons in a quartz-hornblende gneiss (amphibolite); (Bailes, 1975, p. 98).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

REFERENCES:

Assessment Files: 91624, 91628; Manitoba Industry, Trade and Mines, Mines Branch.

Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.

LOCATION 19

NAME: (Mineralization intersected in drill core)

UTM: 6097617N/431270E

ACCESS: Float plane to Compton Lake and traverse

AREA: Snow Creek

AIRPHOTO: MB87007-137

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an airborne EM and radiometric survey of the Guay-Wimapedi lakes area in 1961 (A.F. 91628). An extensive ground follow-up program of staking, linecutting, geophysics and diamond drilling was conducted over the more significant anomalies. DDH Wim-1 was drilled to test the geophysical anomaly in 1961 (Bailes, 1975).

GEOLOGICAL SETTING:

The geophysical anomaly is situated within Burntwood Group grey garnetiferous paragneiss. The contact with Missi Group feldspathic paragneiss is located approximately 100 m northeast of the occurrence (Fig. 18-1).

Lenses of amphibolite of uncertain origin lie both to the southwest and northeast of the occurrence (Bailes, 1975).

MINERALIZATION:

DDH Wim-1 was drilled to a depth of 49.4 m and is reported to have intersected 2.1 m of chloritic schist with minor amounts of graphite, pyrite and pyrrhotite, contained within a hornblende-biotite gneiss (Bailes, 1975, p. 98).

GEOCHEMICAL DATA:

None.

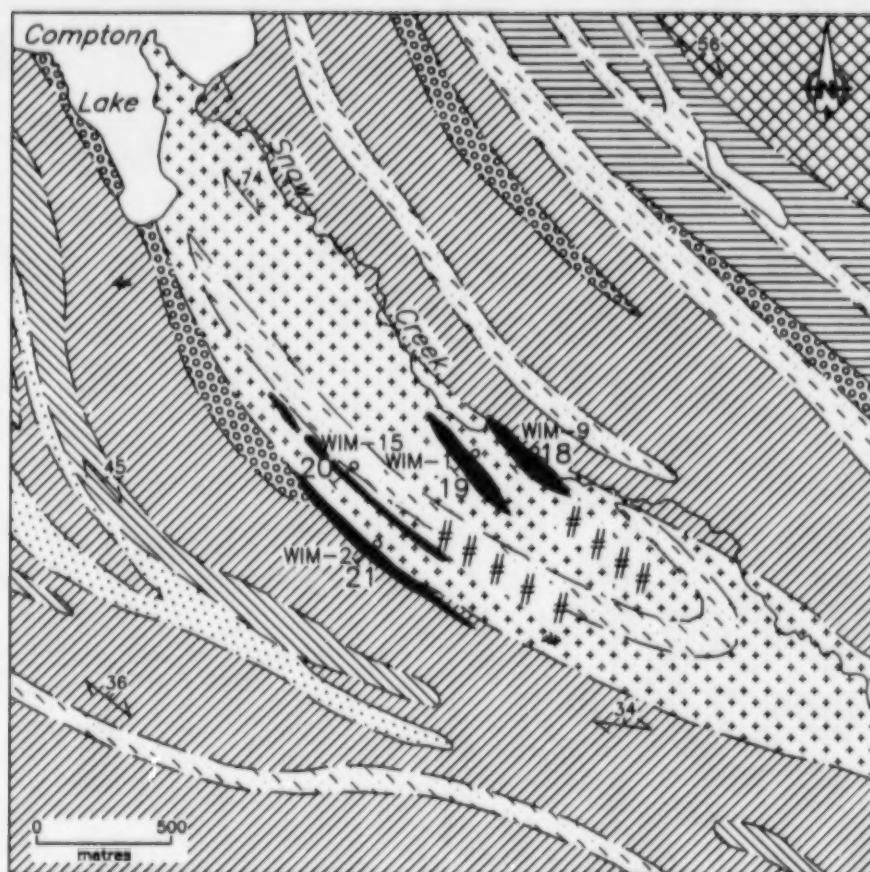
CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.


REFERENCES:

Assessment Files: 91624, 91628; Manitoba Industry, Trade and Mines, Mines Branch.

Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.




HERBLET LAKE GNEISS DOME


 Pink granitoid oligoclase-microcline gneiss

INTRUSIVE ROCKS


 Felsic pegmatite


AMPHIBOLITE (UNCERTAIN ORIGIN)

 Leucocratic plagioclase-hornblende-microcline-quartz gneiss


 Menalocratic hornblende-plagioclase gneiss

MISSI GROUP


 Pink oligoclase-quartz-microcline gneiss


 Meta-arkose and meta-subgreywacke


BURNTWOOD SUITE

 Meta-greywacke

METAVOLCANIC ROCKS 1.9GA


 Felsic metavolcanic gneiss


 Geological contact (approximate)


 Rusty weathered zone

 Foliation

Geology after Bailes (1975).

 EM conductor (Bailes, 1975)

 Drillhole (Bailes, 1975)

 Swamp


 Mineral occurrence location

Figure 18-1: Geological setting of occurrences 18 to 21.

LOCATION 20

NAME: (Mineralization intersected in drill core)

UTM: 6097565N/430836E

ACCESS: Float plane to Compton Lake and traverse

AREA: Snow Creek

AIRPHOTO: MB 87007-137

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an airborne EM and radiometric survey of the Guay-Wimapedi lakes area in 1961 (A.F. 91628). An extensive ground follow-up program of staking, linecutting, geophysics and diamond drilling was conducted over the more significant anomalies. DDH Wim-15 was drilled to test the geophysical anomaly in 1962 (Bailes, 1975).

GEOLOGICAL SETTING:

The geophysical anomaly is situated within Burntwood Group grey garnetiferous paragneiss (Fig. 18-1). A contact with amphibolite is located approximately 50 m

northeast of the occurrence. Missi Group feldspathic paragneiss and felsic pegmatite occur southwest of the occurrence (Bailes, 1975).

MINERALIZATION:

DDH Wim-15 was drilled to a depth of 90.8 m and is reported to have intersected 3.3 m of near solid pyrrhotite and pyrite, with minor chalcopyrite and sphalerite, within a siliceous biotite gneiss (Bailes, 1975, p. 98).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

REFERENCES:

Assessment Files: 91624, 91628; Manitoba Industry, Trade and Mines, Mines Branch.

Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.

LOCATION 21

NAME: (Mineralization intersected in drill core)

UTM: 6097278N/430929E

AREA: Snow Creek

AIRPHOTO: MB87007-137

EXPLORATION SUMMARY:

Canadian Nickel Company completed an airborne EM survey in the area in 1957 (A.F. 91624). There is no record of ground follow-up work.

HBED completed an airborne EM and radiometric survey of the Guay-Wimapedi lakes area in 1961 (A.F. 91628). An extensive ground follow-up program of staking, linecutting, geophysics and diamond drilling was conducted over the more significant anomalies. DDH Wim-2 was drilled to test the geophysical anomaly in 1962 (Bailes, 1975).

GEOLOGICAL SETTING:

The geophysical anomaly is situated at or close to the contact of Burntwood Group grey garnetiferous paragneiss and Missi Group feldspathic paragneiss

(Bailes, 1975). The EM conductor associated with occurrence 20 is located approximately 75 m northeast and parallel to the conductor at this location (Fig. 18-1).

MINERALIZATION:

DDH Wim-2 was drilled to a depth of 75.6 m and is reported to have intersected 6.7 m of disseminated to solid pyrite and pyrrhotite within a siliceous hornblende gneiss (Bailes, 1975, p. 98)

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

REFERENCES:

Assessment Files: 91624, 91628; Manitoba Industry, Trade and Mines, Mines Branch.

Bailes, A.H. 1975: Geology of the Guay-Wimapedi lakes area; Manitoba Mines, Resources and Environmental Management, Mineral Resources Division, Publication 75-2, 104 p.

MAPS NOT FILMED

**CARTES NON
REPRODUITES**

micromedia
a division of IHS Canada

20 Victoria Street
Toronto, Ontario M5C 2N8
Tel.: (416) 362-5211
Toll Free: 1-800-387-2689
Fax: (416) 362-6161
Email: info@micromedia.on.ca